

LEEWARD ISLANDS

REPORT

OF

The Director of Agriculture
for the Year 1947



FOREWORD

Each of the four Presidents of the Leeward Islands has under a Department of Agriculture, under the charge of an Agricultural Superintendent or Agricultural Officer, each of whom submits an annual report. The annual report consists of information regarding the progress made from the agricultural reports, it is added to the annual report of the Chief Veterinary Officer, who, like the Director of Agriculture, is a Federal Departmental Officer, are available to the whole Colony.

LEEWARD ISLANDS

Review of Agricultural Production

WEATHER CONDITIONS

It was a year of low rainfall, only 45.11 inches of rain fell in Antigua. The 1947 rainfall was not very seriously reduced, but the 1948 year will suffer from the very dry weather in the last quarter of 1948. A substantial reduction in cotton acreage was caused, partially at least by lack of water in planting time, partly also by adverse weather. Total production was severely hampered in all islands, and much of the crop was badly spoiled by conditions.

REPORT

OF

The Director of Agriculture for the Year 1947

In the 1947 year, the rainfall for 1947 was 45.11 inches, which is 10 inches more than the rainfall for 1946, and 10 inches less than for the 34 years 1912-1946. The rainfall for 1947 was 45.11 inches, which is 10 inches more than the rainfall for 1946, and 10 inches less than for the 34 years 1912-1946. The rainfall for 1947 was 45.11 inches, which is 10 inches more than the rainfall for 1946, and 10 inches less than for the 34 years 1912-1946.

The rainfall for three sections in Antigua is given below:

	Antigua	St. John	St. Peter
Rainfall in 1947 (inches)	45.11	40.81	41.35
Mean of previous 5 years (inches)	53.25	43.50	41.92

The island of Anguilla received 33.87 inches.

Distribution in both islands was poor; there were no good rains between January and September.

MONTserrat

Rainfall at the Grove Road Station amounted to 51.33 inches (or less about 50 inches), with unfavourable distribution—exceptionally wet in January and September-October, and too dry at other times.

VIrgIn ISLANDS

Total rainfall, at 51.33 inches, was only slightly below average (57 inches), but over half of it fell in September-October and much of the rest came in the form of isolated heavy downpours, separated by prolonged periods of drought.

FOREWORD

1. Each of the four Presidencies of the Leeward Islands maintains a Department of Agriculture, under the charge of an Agricultural Superintendent or Agricultural Officer, each of whom submits an annual report. The present report consists of information abstracted or quoted verbatim from the presidential reports; appended to it is the annual report of the Chief Veterinary Officer, who, like the Director of Agriculture, is a federal officer whose services are available to the whole Colony.

SECTION I

Review of Agricultural Production

2.

WEATHER CONDITIONS

It was a year of low rainfall in some areas and of ill-distributed rainfall in others. The 1947 output of sugar was not very seriously affected, but the 1948 crop will suffer from the very dry weather in the last quarter of 1947. A substantial reduction in cotton acreage was caused, partially at least, by lack of rain at planting time; yields were also adversely affected. Food production was severely hampered in all islands, and grazing grounds were often badly parched. Conditions in the separate presidencies are summarised below.

ANTIGUA

The average rainfall from 49 stations was only 28.84 inches which is 13.35 inches below the average (42.20 inches) for the 15 years, 1933-1947. The lowest rainfall (19.07 inches) was recorded at Comfort Hall and the highest (40.12 inches) at Greencastle. This low rainfall was all the more disastrous in that it followed a year in which rainfall (37.11 inches) was also well below average.

Also unfortunate was the fact that precipitations for November and December, critical months where the cane crop is concerned, were much below the lowest previously recorded since 1933.

ST. KITTS-NEVIS

In St. Kitts the mean rainfall for 1947 was 48.22 inches which is 10 inches more than the rainfall for 1946 and 6 inches less than the mean for the 34 years 1914-1947. The distribution of rainfall was poor and approximately 75 per cent of the total precipitation was recorded during January, May, September and October. For November the mean rainfall was only 1.11 inch which is 6 inches below the mean for this month.

The rainfall for three sections in Nevis is given below :—

	<i>Prospect</i>	<i>Cades Bay</i>	<i>New River</i>
Rainfall in 1947 (inches)	45.11	39.51	34.03
Mean of previous 5 years (inches)	53.23	43.59	41.92

The island of Anguilla received 33.57 inches.

Distribution in both islands was poor; there were no good rains between January and September.

MONTSERRAT

Rainfall at the Grove Botanic Station amounted to 53.23 inches (average about 60 inches), with unfavourable distribution—exceptionally wet in January and September-October, and too dry at other times.

VIRGIN ISLANDS

Total rainfall, at 54.59 inches, was only slightly below average (57 inches), but over half of it fell in September-October and much of the rest came in the form of isolated heavy downpours, separated by prolonged periods of drought.

AGRICULTURAL INDUSTRIES

3.

SUGAR

ANTIGUA

The Antigua Sugar Factory produced 22,736 tons of grey crystals and 4,921 tons of molasses. The Montpelier Factory, which never got into full production following extensive alterations, produced only 100 tons muscovado sugar and 10,480 gallons syrup to be used for the distillation of rum.

The following table gives data for 1947 and corresponding figures for the years 1943-1946.

TABLE I

Year	Production Grey Crystals Tons	Muscovado Tons	Average yield tons cane/acre	Tons cane per ton sugar
1943 ..	21,867	235	18.3	7.99
1944 ..	16,279	125	16.7	7.47
1945 ..	20,663	72	17.3	7.15
1946 ..	26,024	122	21.8	7.57
1947 ..	22,736	100	17.7	7.87

There was a further increase in the price of sugar. The Antigua Sugar Factory crop was sold at £21. 1s. 10d. per ton f.o.b. Non-contracting suppliers received a total of 30/5 per ton of cane and contractors, including contracting peasant settlements, 32/4.34097.

The area reaped during 1947 was 10,269 acres and that to be reaped in 1948 is estimated at 8,970 acres.

The varietal make-up of the island's cane crop is shown in Table II below:—

TABLE II

Acreage of each variety as a percentage of total cane acreage cut

Variety	1946 %	1947 %
B34104	35.22	22.77
B37161	48.77	55.66
B3439	11.71	12.34
B37172	1.99	2.31
B39177	0.14	Nil
B4098	1.40	6.72
Others	0.77	0.20

ST. KITTS

Considering that 1946 was the driest year for almost quarter of a century, that the reaping season in 1947 was also unusually dry, that nitrogenous fertilizers were in short supply, and that harvesting was hampered by labour troubles and a number of large cane fires, it is remarkable that 34,357 tons grey crystal sugar (96°) were produced as against 33,513 tons in 1946. The figures issued by the St. Kitts (Basseterre) Sugar Factory Ltd. show that 10,718 acres were harvested by estates in St. Kitts as against 9,524 acres in 1946—an increase of nearly 1,200 acres.

This output was produced from 286,231 tons of cane at the rate of 8.33 tons of cane to the ton of sugar. Contracting estates averaged 26.13 tons of cane and 3.10 tons of sugar to the acre as against 27.99 tons cane and 3.50 tons sugar for the previous crop.

Comparable statistics for previous years are given in Table III.

TABLE III

Year	Production of Grey Crystals tons	Average Cane yield per acre tons	Tons of Cane per ton of Sugar
1943	32,161	29.01	8.25
1944	27,621	22.75	7.71
1945	28,543	26.22	7.90
1946	33,513	27.99	8.00
1947	34,357	26.13	8.33

In 1947, 73 per cent of the acreage harvested was planted to the variety B37161, which stood up to the very dry conditions in 1946 and early 1947 and must be given full credit for the very good crop which was produced. The increasing popularity of this variety is shown in Table IV below:—

TABLE IV

Varietal Distribution of Cane in St. Kitts
Percentages of Crop Harvested

Variety	Crop year					
	1942	1943	1944	1945	1946	1947
B37161	—	0.07	5.63	30.80	56.96	73.00
B34104	—	—	0.45	2.10	7.74	8.34
B3439	18.24	25.80	26.29	18.05	6.02	4.86
B35187	—	0.40	2.14	5.55	7.70	4.63
B2935	61.46	54.68	47.57	26.29	9.70	2.58
B.H.10(12)	17.64	17.00	15.70	12.23	6.98	2.41
B4098	—	—	—	—	0.10	0.70
B41211	—	—	—	—	—	0.01
B38212	—	—	—	—	0.05	—
Mixed	1.30	0.44	1.08	4.45	4.52	3.47

The sugar was sold by St. Kitts (Basseterre) Sugar Factory Ltd. for £20. 15s. 6d. per ton f.o.b. In addition to the cash price the sum of £2. 15s. 0d. per ton was received on Export Sugar to be held by the St. Kitts Government as special funds for rehabilitation, price stabilisation and social welfare. The first payment for canes was 25s. 9.47 d. per ton. The Contractors' share of the surplus was 5s. 4.66d. per ton making a total price of 31s. 2.40d. per ton cane.

NEVIS

There was a further sharp expansion in the peasant grown Nevis cane crop, as may be seen from Table V.

TABLE V

Year.	Tons of canes purchased for shipment to St. Kitts	Estimated tonnage of canes used for the manufac- ture of musco- vado sugar	Price paid by Govt. to growers per ton.
1945 ..	540	600	19s. 1d.
1946 ..	1,698	1,022	22s. 7d.
1947 ..	6,510	1,544	23s. 6d.

The Marketing Department weighed and loaded into lighters all the canes which were shipped to the St. Kitts factory. In addition to several privately owned lorries five Government lorries were kept busy transporting canes to pier head.

The contractor's price for handling cane from lorry to lighter was 11½d. per ton and the cost of lighterage to St. Kitts 3/- per ton. The cost of transportation by Government lorries was 1s. 3d. per ton per mile.

No serious difficulties were experienced at Charlestown but at Newcastle, where shipping facilities are practically non-existent, shipments were very slow. An improvement in the shipping facilities of this port will be an urgent necessity if cane production increases, and a scheme involving considerable expenditure by Government has been submitted.

The 1948 crop has been adversely affected by drought and is not expected to exceed 4,000 tons cane for shipment to St. Kitts.

MONTSERRAT

About 120 acres of sugar cane was grown for the production of syrup for the distillation of rum.

4. SEA ISLAND COTTON

GENERAL

The Sea Island Cotton grown in Antigua, St. Kitts-Nevis and Montserrat is all of the M.S.I. type. Seed of this type is issued annually from the Montserrat Cotton Station and multiplied locally in the other presidencies for distribution to growers. Since 1942 there has been a considerable decline in the acreage of cotton planted. Rising costs of production and uncertainty as to markets and prices have been the chief depressing factors. These factors again operated in 1946/7.

During the course of the year the Colony had the advantage of a visit from Mr. P. W. Briggs, a ginnery engineer of the British Cotton Growing Association, whose visit was financed from Colonial Development and Welfare funds. He was able to give much useful advice on ginning technique, which should materially assist the industry to keep costs down and quality up.

ANTIGUA

The 1946-47 crop was reaped from an estimated 498 acres as compared with 1,113 acres in the previous season. Total production amounted to 77,376 lbs. clean lint and 10,525 lbs. stains; an average yield per estimated acre of 176 lbs. The island of Barbuda produced 5,417 lbs. of seed cotton which was ginned in Antigua, giving 1,634 lbs. clean lint and 95 lbs. stains.

Table VI gives production figures and yields per acre for the seasons 1938-1939 to 1946-1947.

TABLE VI

Season.	Acreage Planted	Clean lint produced lbs.	Clean lint yield per acre lbs.
1938-39..	2,000	242,116	121
1939-40..	2,645	416,393	157
1940-41..	4,826	659,376	136
1941-42..	4,197	416,274	99
1942-43..	896	93,530	82
1943-44..	988	124,732	127
1944-45..	1,129	189,992	170
1945-46..	1,113	282,502	253
1946-47..	498	77,376	155

The reduction in yield as compared to the previous crop was largely due to a very severe pink boll worm attack. Larvae in many cases attacked the seed which resulted in some seed debris being present in the ginned lint.

The Department continued to exercise close supervision over all handling and ginning operations. Reports on samples of lint sent to the Shirley Institute showed that there was a further improvement in quality.

The entire crop of clean lint was sold to the United Kingdom Board of Trade Cotton Control at 2/3 per lb. f.o.b. Stains were disposed of locally at 1/2 per lb.

The final estimate for the 1947-1948 crop was 1,544 acres.

ST. KITTS

In St. Kitts 956 acres of cotton were planted as against 860 acres in 1946. In general yields were low as a result of the dry weather during the greater part of the growing season but one or two estates were fortunate enough to obtain yields of over 300 lb. clean lint to the acre. 171,755 lb. of clean lint and 22,283 lb. of stained lint were reaped with an average yield of 180 lb. clean lint per acre. There was only slight damage to the crop from the attacks of insect pests or diseases.

The clean lint was sold to the Cotton Control at 2s. 4d. per lb. f.o.b. St. Kitts. The stained lint was sold locally.

Comparative statistics of production are given in Table VII.

TABLE VII

Season.	Acreage Planted	Clean Lint produced lbs.	Lint per acre lbs.
1941 ...	1,400	239,496	171
1942 ..	1,530	139,862	92
1943 ...	1,100	169,015	154
1944 ..	342	47,560	139
1945 ..	1,032	226,227	219
1946 ..	860	147,195	171
1947 ..	956	171,755	180

NEVIS

As will be seen from Table VIII, there was a further decline in acreage, and yields were very poor.

TABLE VIII

Season.	Acreage Planted.	Clean Lint produced lbs.	Lint per acre lbs.
1940-41..	4,000	518,242	130
1941-42..	4,500	579,148	129
1942-43..	2,573	186,081	72
1943-44..	2,544	287,892	113
1944-45..	2,680	296,685	111
1945-46..	1,688	196,328	116
1946-47..	1,319	82,063	65

Stained lint amounted to 19,161 lbs., nearly a quarter of the total production. Heavy pink boll worm infestation was responsible for this high proportion of stains.

The clean lint was sold to the Cotton Control at 2s. 3d. per lb. f.o.b. Nevis and the stained lint was sold locally at 1s. 4d. per lb. Cotton seed which was not required for planting was sold to the Spooners Cotton Factory, St. Kitts, for crushing.

ANGUILLA

The area under cotton for the 1946-47 crop is estimated to have been approximately 30 acres. Production amounted to 1,838 lbs. of clean lint and 134 lbs. of stained lint with a yield of 61 lbs. clean lint per acre.

The clean lint was sold to the Cotton Control at 2s. 4d. per lb. f.o.b.

Table IX gives the statistics during recent years.

TABLE IX

Season	Acreage Planted	Clean Lint produced lbs.	Lint per acre lbs.
1940-1	150	17,931	119
1941-2	225	29,357	130
1942-3	200	16,024	80
1943-4	70	4,343	62
1944-5	70	4,385	63
1945-6	60	4,040	67
1946-7	30	1,838	61

MONTSERRAT

The island's production of clean lint amounted to 253,008 lbs. and of stained lint 30,500 lbs. from 2,659 acres, an average yield of 95 lbs. clean lint and 12 lbs. stained lint per acre. Production and yields in recent years are shown in Table X.

TABLE X

Season	Acreage Planted	Clean Lint produced lbs.	Lint per acre lbs.
1941	5,395	1,128,724	209
1942	4,467	579,190	130
1943	4,005	611,752	153
1944	3,074	569,534	185
1945	3,770	514,349	136
1946	2,521	347,977	138
1947	2,659	253,008	95

The total area planted was again low; it was not appreciably greater than in 1946. The reasons for the low acreage appear to have been very similar to those contributing to the trend towards decreasing acreages during the previous five years or so. It was not until the middle of January, after estates had completed their preparatory cultivation, that it became known that the price of clean lint would be increased by 25 per cent. The weather at planting time was most unfavourable, and there were cases where cotton lands were planted three times on account of the drought, and then finally abandoned for the season. The emigration of numbers of the island's best labourers and peasant growers continues. Table XI shows the relative areas planted under the various systems of tenure or cropping in 1947 and in recent years.

TABLE XI

Season	Peasants rented or freehold land acres	Share cropping acres	Estate cultivation acres	Total acres
1941	2,340	1,790	1,265	5,395
1942	1,879	1,409	1,179	4,467
1943	1,673	1,297	1,035	4,005
1944	1,152	920	1,002	3,074
1945	1,726	982	1,062	3,770
1946	1,075	637	809	2,521
1947	1,137	628	894	2,659

The planting season opened on the 1st March. In a few small and favoured areas planting rains allowed early establishment of the crop, but over much of the island establishment was slow and uneven, and from field to field there was marked lack of uniformity in growth. Some sixty per cent of the crop was established around the end of May. The planting season was finally closed on the 15th June. The crop suffered severely from black boll rot following the heavy rains of late September. Owing to the lateness of the crop the close season did not begin until the 15th December. The yield of 107 lbs. lint, including stained lint, per acre, for the island was (with the exception of the hurricane year 1924-25) the lowest since the establishment of the cotton industry.

The whole crop of clean lint was sold to the Cotton Control in the United Kingdom, the price being 2/6 per lb. f.o.b. The local price for clean seed cotton was 7½d. per lb. About 26 tons of cotton seed meal was shipped to Dominica and Antigua. On account of the smallness of the crop, and the need of cotton seed products in the island the export of cotton seed meal, cake and oil was closely restricted.

5. LIME PRODUCTS

MONTSERRAT

Exports of limes and lime products for 1947 and the previous three years are set out in Table XII, together with annual totals expressed in terms of barrels of fruit. In calculating these annual totals 7½ gallons of raw lime juice were taken to represent one barrel of lime fruits, and 1 lb. of distilled lime oil is taken to represent three barrels of lime fruits. No conversion was made in respect of ecuelled oil as this product is usually obtained from limes which are afterwards crushed for juice production.

TABLE XII

Year	Green Limes barrels	Raw Lime Juice gallons	Ecuelled Oil lbs.	Distilled Oil lbs.	Total calculated as Limes barrels
1944	15	49,548	814	555	8,286
1945	3	36,572	593	299	5,776
1946	16	24,122	601	487	4,693
1947	13	55,620	304	114	7,771

Some 17,000 gallons of raw lime juice were awaiting shipment at the close of the year 1947. A fair acreage of lime trees planted during the past ten years or so is coming into maximum bearing. Considerable numbers of young trees die every year from causes which are still undetermined despite much investigation.

VIRGIN ISLANDS

There is a small trade in limes between the British Virgin Islands and St. Thomas in the American group. In 1947 exports amounted to 59 barrels, as against 113 barrels in 1946.

6. COCONUTS

There were small exports of coconuts from both Nevis (63,958 nuts) and the Virgin Islands (52,437 nuts).

7. FOOD PRODUCTION

The Departments continued their endeavours to promote the local production of foodstuffs to the maximum extent that conditions would allow.

ANTIGUA

The initial response to an intensified Grow More Food Campaign was good but efforts were seriously hampered by the very adverse weather conditions. Growers in a number of cases lost their entire crops of maize, etc. This was all the more discouraging in that they had similar experiences in the previous year.

Estimates of total acreages under food crops varied from 1,739 in January to 754 in May with an average of about 1,200 acres.

As in previous years principal crops were sweet potatoes, maize, yams, cassava, peas and beans and tomatoes.

ST. KITTS

In St. Kitts all sugar estates continue to be required under the Vegetable Production (Defence) Control Order, 1942, to plant and cultivate vegetables on a total of at least 10 per cent of the total acreage of sugar cane cultivation. Yams, maize and sweet potatoes were required to be planted but production was affected by dry weather and serious labour disturbances during the year. Prædial larceny continues to be a great handicap to efforts to increase local food crops.

NEVIS

In Nevis the drought had a serious effect upon food production and there was a scarcity of planting material particularly sweet potato cuttings and seed maize.

MONTSERRAT

Some estates cultivated comparatively small areas of food crops, and peasants produced fair quantities. The dry weather which prevailed for many months of the year had a marked effect in reducing supplies of vegetables of all kinds, and supplies available in Plymouth market were at times insufficient to meet demands. But at other times there was a small volume of exports to other West Indian Islands; the principal items were:—

Tomatoes	..	..	..	10,120 lbs.
Carrots	..	..	..	51,840 „
Shallots	..	..	..	13,005 „

The organisation of the export trade in vegetables is hampered by the irregularity with which opportunities arise to ship by steamers with refrigerated cargo space.

VIRGIN ISLANDS

Due to the dry conditions prevailing during the year ground provisions and vegetables were scarce. Good prices were obtained for the few that were available. With the coming of the rains a large acreage was planted with Sweet Potatoes, Tannias, etc.

8.

LIVESTOCK

The general health of livestock in the Colony continued to be satisfactory in so far as there were no serious outbreaks of disease. But the plane of nutrition, which is never high, was at times reduced by drought to a deplorably low level. In spite of demonstrations and propaganda by the Departments, farmers, with a few noteworthy exceptions, make no attempt to improve pastures, to conserve fodder or to grow soiling crops. Only in the Virgin Islands of Tortola and Virgin Gorda is it possible to record reasonable progress in the making of pastures—guinea grass pastures in this case.

On the other hand many stock owners are fully alive to the possibility of improving their herds and flocks by the use of better sires. Good use has been made of the stud animals maintained by the Departments in all Presidencies, and there has been no difficulty in disposing of young breeding stock. Dipping tanks have also been well utilized.

Supplies of slaughter stock have generally been adequate in numbers, except in Montserrat, but poor in quality. There is room for a much bigger output of dairy produce and poultry. The shortage of home-grown feeding stuffs and the high cost of imported supplies are the chief obstacles to expansion in these lines.

The Virgin Islands export trade in livestock was maintained at about the same level as in previous years. The bulk of this trade is with the American

Virgin Islands but St. Martin in the French West Indies took a little. Comparative statistics are given in Table XIII below: —

TABLE XIII
Exports of Livestock from the Virgin Islands

Year	Cattle	Sheep	Goats	Swine	Equines	Poultry	Value £
1944	1,136	523	1,636	498	1	2,713	19,100
1945	1,147	394	1,714	453	1	3,186	19,866
1946	1,178	367	1,682	364	45	3,218	21,859
1947	1,053	341	1,998	416	2	1,829	20,813

There were also small exports of stock from other islands as shown in Table XIV below.

TABLE XIV
Sundry Exports of Livestock in 1947

Island	Cattle	Sheep	Goats	Swine	Equines	Poultry
Barbuda (Antigua) ..	31	37	162	4	75	—
Nevis ..	47	—	—	—	158	—
Montserrat ..	2	—	—	2	60	37

9. STATISTICS OF EXPORTS AND IMPORTS

Comparative statistics of the principal exports and of certain imports during recent years are given in Tables A, B, C, D & E.

Items of imports which have been included are those which affect agricultural production or which illustrate the degree to which the Colony is dependent upon outside supplies of staple foodstuffs.

TABLE A

PRINCIPAL EXPORTS FROM ANTIGUA

COMMODITY	1938		1945		1946		1947	
	Quantity	Value £	Quantity	Value £	Quantity	Value £	Quantity	Value £
Sugar (tons)	20,844	194,470	18,495	300,460	24,020	445,324	17,848	416,646
Molasses (gals.)	1,054,087	11,521	663,148	11,216	477,850	7,990	362,387	7,680
Rum (gals.)	9,449	1,152	19,992	4,289	30,317	7,232	39,143	9,651
Cotton Lint (bales of 400 lb.)	437	11,910	456	18,232	706	19,668	210	9,274
Cotton Seed, Cotton Seed Oil & Meal	—	313	—	467	—	1,640	—	297
Limes and lime products	—	657	—	1,529	—	403	—	450
Tomatoes (crates of 20 lb.)	5,493	639	101	45	280	125	281	164
Coconut products	—	86	—	—	—	—	—	47
Livestock	—	300	—	220	—	676	—	147
Hides and Skins	—	207	—	392	—	499	—	513
*Other agricultural products	—	650	—	3,206	—	2,585	—	1,726
		221,905		340,056		486,142		446,595

* Includes forest products, fruit, vegetables and ground provisions.

TABLE B

PRINCIPAL EXPORTS FROM ST. KITTS-NEVIS

COMMODITY	1938		1945		1946		1947	
	Quantity	Value £	Quantity	Value £	Quantity	Value £	Quantity	Value £
Sugar (tons)	26,481	204,835	26,666	459,394	30,739	599,485	31,631	756,560
Molasses (gals.)	600,828	8,770	1,535,286	33,672	679,820	15,576	574,786	13,490
Tomatoes (crates of 20 lb.)	2,921	445	—	—	—	—	—	—
Cotton Lint (bales of 400 lb.)	1,824	45,193	1,484	50,347	674	17,113	1,155	48,240
Cotton seed, meal, cake and oil	—	1,204	—	890	—	901	—	62
Coconuts and coconut products	—	349	—	1,490	—	622	—	446
Livestock	—	1,309	—	4,234	—	2,988	—	4,557
Hides & Skins	—	230	—	452	—	1,320	—	1,797
Salt (Brls. of 300 lb.)	26,947	3,240	48,317	16,135	40,442	14,144	54,645	21,441
*Other Agricultural products	—	430	—	717	—	551	—	556
Total	—	266,005	—	567,331	—	652,700	—	847,149

* Includes forest products, fruit, vegetables and ground provisions.

TABLE C

PRINCIPAL EXPORTS FROM MONTserrat

COMMODITY	1938		1945		1946		1947	
	Quantity	Value £	Quantity	Value £	Quantity	Value £	Quantity	Value £
Cotton Lint	1,081	25,689	2,406	91,960	334	12,863	924	39,696
Cotton Seed & Cotton Seed Products ...	—	937	—	1,404	—	291	—	208
Lime & Lime Products ...	—	4,081	—	1,699	—	3,323	—	7,706
Tomatoes (crates of 20 lbs.) ...	35,001	5,568	470	131	1,188	221	292	87
Livestock ...	—	431	—	80	—	273	—	37
Hides & Skins ...	—	235	—	162	—	187	—	299
*Other Agricultural Products ...	—	1,420	—	3,174	—	2,533	—	1,933
TOTAL ...		38,361		98,610		19,691		49,966

* Includes forest products, fruit, vegetables and ground provisions.

TABLE D

PRINCIPAL EXPORTS FROM THE BRITISH VIRGIN ISLANDS

COMMODITY	1938		1945		1946		1947	
	Quantity	Value £	Quantity	Value £	Quantity	Value £	Quantity	Value £
Limes	—	33	—	85	—	54	—	37
Tomatoes	—	13	—	26	—	21	—	20
Coconuts	—	188	—	585	—	520	—	503
Livestock	—	5,897	—	19,866	—	21,859	—	20,813
Rum (gals.)	—	—	100	30	229	74	4	2
*Other Agricultural Pro-	—	—	—	—	—	—	—	—
ducts	—	2,985	—	6,127	—	5,948	—	6,117
Fish	—	401	—	1,116	—	2,991	—	2,048
TOTAL	—	9,517	—	27,835	—	31,467	—	29,540

* Includes forest products, fruit, vegetables and ground provisions.

SECTION II

Investigational Work of the Departments of Agriculture

10. (1) CENTRAL EXPERIMENT STATION: ANTIGUA

The Central Experiment Station at Friar's Hill, Antigua, was established under Colonial Development and Welfare Scheme No. 465.

General

As in 1946 work undertaken during the year was to a large extent developmental. Coupled with an extensive building programme was the clearing of scrub bush for increased pasturage and cotton and food production. The total new acreage cleared was approximately 100.

Weather Conditions

As almost everywhere else in the island rainfall was extremely low. Towards the end of the year the water supply position became very precarious.

Rainfall figures are as under —

January	..	..	..	3.97 ins.
February	..	..	..	.57 "
March	..	..	..	.59 "
April	..	..	..	.67 "
May	..	..	..	3.34 "
June	..	..	..	1.49 "
July	..	..	..	2.97 "
August	..	..	..	2.50 "
September	..	..	..	7.82 "
October	..	..	..	4.28 "
November	..	..	..	.43 "
December	..	..	..	.21 "
				28.84 "

Land Usage

The following table shows the utilization of developed land as at the end of the year.

<i>Utilization</i>	<i>Acreage</i>	<i>Remarks</i>
Cane Nurseries & Experiments ..	20.7	
Food Crop Demonstrations & Experiments	17.8	
Food Production	50	Scrub bush cleared and prepared for food in connection with the island's Grow More Food Campaign
Paddocks	121	
Vegetable Garden	1.3	
Fodder Crops	20	
Cotton	57	To multiply pedigree seed for the island.

Buildings

Additional buildings were erected as follows:—A stockman's house, implement shed, temporary milking shed, fumigatorium, cotton sorting and storing shed, calf house, calf shelter. Sundry concrete drains and pavements were laid.

Water Supplies

An additional windmill on a 30 ft. tower was erected at the main pond and two additional tanks with a total capacity of 30,000 gallons built. Water was piped to pens and stables.

Fencing

Seven additional paddocks totalling approximately 50 acres were enclosed, and a start made with the enclosing of another 70 acres.

Cotton Seed Multiplication

In order to supply the needs of the Island, the multiplication of cotton seed, ex the Montserrat Cotton Station, is being undertaken at the Central Experiment Station. Fifty-seven acres were cleared of bush and, despite a late start and lack of mechanical equipment, this area was contoured and brought into condition in time for the cotton planting season. Germination was excellent, but subsequent growth was retarded by the severe drought and yields will be adversely affected. Reaping was started in November.

Sugar Cane

Observation plots of new varieties were laid down on Fitches, Wetherells and Gunthorpe Clays in the 1946 planting season. Regular observations were made during 1947 and the plots will be reaped in the 1948 planting season.

Large nurseries of standard and new varieties were grown and cuttings utilized in the island-wide experiments referred to elsewhere.

Food Crops

<i>Crop</i>	<i>Acreage</i>	<i>Total Yield lbs.</i>	<i>Yield per acre in lbs.</i>
Maize	23	18,958	824
Sweet Potatoes	1.56	10,079	6,461
Cow Peas	7.82	3,476	444
Lima Beans	5.32	1,040	195

Part of these areas were used to provide planting material in connection with the island's Grow more Food campaign and part used for food experiments and demonstrations.

Yields are not fully representative as there were appreciable losses in many cases owing to praedial larceny.

Under the severe drought conditions which obtained, yields were in most cases very satisfactory and demonstrated strikingly the benefit to be derived from early thorough cultivation and clean weeding.

Food Crop Experiments

Replicated manurial trials with maize, yams and sweet potatoes were laid down on two soil types—a Fitches and a Gunthorpe Clay.

The results from the maize experiments on both of the soil types are not being recorded as in one case extreme soil variation evidenced itself and in the other, there was considerable loss due to praedial larceny.

Results from the sweet potato experiments are recorded hereunder:—

Fitches Clay—Manurial Experiment on Sweet Potatoes

Preparatory Cultivation—Tractor ploughed on 17/4/47

Banked by fork on 24/4/47

Layout—One 4x4 Latin Square

Plot sizes—1/43 acre

Spacing—3' rows planted at 1' intervals

Planted—3/9/47

- Treatments (per acre)—1. No manure.
 2. 2 cwt. Sulphate of Ammonia
 3. 2 cwt. Superphosphate
 4. 2 cwt. Superphosphate plus 2 cwt. Sulphate of Ammonia.

Manures applied on 29/9/47

Reaped on 8/1/48

Summarised yields in lbs. per acre:—

Nil —5,579

S/A—5,816

P —5,533

NP —5,912

It would seem that under the very dry conditions obtaining during the period of the experiment little or no response is obtainable from standard dressings of artificials.

Gunthorpe Clay—Manurial Experiment on Sweet Potatoes

Preparatory Cultivation—Close ploughed on 3/5/47

Trenched (24' beds) on 22/5/47

Banked on 30/5/47

Layout—Two 4x4 Latin Squares

Plot sizes—1/45 acre

Spacing—3' x 1'

Planted—2/9/47

- Treatments (per acre)—1. No manure.
 2. 2 cwt. Sulphate of Ammonia
 3. 2 cwt. Superphosphate
 4. 2 cwt. Superphosphate plus 2 cwt. Sulphate of Ammonia.

Manures applied—29/9/47

Reaped—12/1/48

Yields in lbs. per acre:—

Nil — 9,636

N — 9,236

P —10,285

NP —10,040

Conclusions:

Differences in yields are not statistically significant.

Observations on Vegetable Gardening

A vegetable garden of just over 1 acre was cultivated throughout the year. Plantings of standard and new varieties were made at regular short intervals. Only young seedlings and lettuce were watered artificially as required.

The following table indicates comparative results obtained at the time of reaping.

Yields on the whole owing to prevailing weather conditions were low.

TABLE XV

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Cabbage "All Head Early"	—	G	—	—	—	—	—	P	—	—	VG	—
Cauliflower "Early Patna"	—	F	—	—	—	—	—	—	—	—	F	—
Turnips "White Globe"	—	G	—	G	G	—	—	—	—	—	—	—
Tomatoes "Marglobe"	—	P	—	—	—	—	—	F	—	—	—	VP
Egg Plant "Black Beauty"	—	F	—	—	—	—	F	P	—	—	—	—
Parsley "Paramount"	—	G	G	—	—	—	—	—	—	—	—	—
Shallots—Local variety	—	—	VG	—	—	—	—	—	—	—	—	—
Beet—"Improved Blood"	—	—	F	G	G	G	F	—	G	F	VG	—
Irish Potatoes "Unknown"	—	—	—	VP	—	—	—	—	—	—	—	—
Kohl Rabi "Early Purple Vienna"	—	—	—	F	F	—	—	—	G	G	—	—
Radish "Early Long Scarlet"	—	—	—	G	G	—	—	—	—	—	G	—
Carrots "Chantenay"	—	—	—	—	G	G	—	VP	F	F	—	—
Lettuce "Mignonette"	—	—	—	—	—	F	G	F	G	F	—	—
String Beans "Kentucky Wonder"	—	—	—	—	—	—	F	—	—	G	F	—
Cucumber "Jamaica Variety"	—	—	—	—	—	—	G	G	—	—	—	—
Sweet Pepper "California Wonder"	—	—	—	—	—	—	G	—	G	—	G	G

Fodder Grasses

Six experiments were reaped during the year and four are being continued for a further period :—

1. Variety trial with and without Nitrogen
2. Manurial trial with Guinea Grass
3. Spacing trial with Elephant Grass
4. Spacing trial with Elephant Grass.

Summarised below is relevant information together with results as obtained up to the end of 1947 —

Planted—11/10/45

Layout —Two 4 x 4 Latin Squares

Spacing—3' x 2'

Duration of Experiment—19 months

Manurial Treatments :—

Basal application of 2 cwt. Sulphate of Ammonia and 1 cwt. Superphosphate applied after planting and after subsequent reapings as considered necessary.

Plot size—1/67 acre.

Grass	No. of times reaped	Yield per acre in tons	% loss in yield between 1st and final reaping	Total amount fertilizer applied (Rate per acre)
Elephant ..	6	49.5	69	8 cwt. Sulphate of Ammonia and 4 cwt. Superphosphate
Guinea ..	6	28.0	75	
Guatemala ..	5	30.6	72	6 cwt. Sulphate of Ammonia and 3 cwt. Superphosphate
Uba Cane ..	4	15.8	86	

Date of last reaping—8/5/47

This experiment has been discontinued because the plots of Guatemala Grass were never properly established and plots of Uba Cane have died out.

B. Varietal & Manurial

Planted—23/10/45

Layout—One 4 x 4 Latin Square with Manurial half-plots (H.P.)

Spacing—3' x 2'

Duration of experiment until last reaping—22 months

Manurial treatments :—

2 cwt. Ammonium Nitrate per acre applied to half-plots after planting and subsequently when considered necessary.

Plot size—1/50 acre.

Grass	No. of times reaped	Yields in tons p.a.		% loss in yield between 1st and final reaping		Total amount fertilizer applied (Rate per acre)
		Unmanured H.P.	Manured H. P.	Nil	N	
Elephant ..	7	46.2	53.6	86	86	10 cwt.
Guinea ..	7	27.3	35.4	89	86	Ammonium Nitrate
Guatemala ..	6	30.8	34.6	77	90	8 cwt.
Uba Cane ...	6	23.3	24.5	88	91	Ammonium Nitrate

C. Manurial Experiment with Elephant Grass

Planted—29/10/45

Layout —Two 4 x 4 Latin Squares

Spacing—3' x 2'

Duration of Experiment—20 months

Manurial treatments :—

Manures applied after planting and after reapings as considered necessary.

Total amounts of manure applied—rate per acre

Nil—No manure

N —10 cwt. Sulphate of Ammonia

P — 5 cwt. Superphosphate

NP—10 cwt. Sulphate of Ammonia plus 5 cwt. Superphosphate

Manurial treatment at each application—rate per acre

1. Nil

2. 2 cwt. Sulphate of Ammonia

3. 1 cwt. Superphosphate

4. 1 cwt. Superphosphate plus 2 cwt. Sulphate of Ammonia at each application

Plot size—1/50 acre

No. of times reaped	Total Yields in tons per acre			
	Nil	N	P	NP
6	32.1	44.7	32.2	47.0

As stated in a previous report, it is noteworthy that Superphosphate when applied without nitrogen has given no increase in yield over no manure.

D. Manurial Experiment with Guinea Grass

Planted—11/1/46

Layout —One 4 x 4 Latin Square

Spacing—3' x 2'

Duration of experiment to last reaping—22 months

Manurial treatments at each application (As in Experiment C)

Total amounts of manure applied—rate per acre

Nil—No manure

N —16 cwt. Sulphate of Ammonia

P — 8 cwt. Superphosphate

NP— 8 cwt. Superphosphate plus 16 cwt. Sulphate of Ammonia

Plot size—1/82 acre

No. of times reaped	Total Yields in tons per acre			
	Nil	N	P	NP
8	21.8	35.7	22.3	40.9

As in the case of the manurial experiment with Elephant Grass, the lack of response to phosphate alone is noticeable. Nitrogen alone gives a large increase in yield and nitrogen plus phosphate a still larger one.

E. Spacing Experiment with Elephant Grass

Planted—19/1/46

Layout —One 4 x 4 Latin Square

Spacing—1. 2 x 2 feet

2. 2 x 3 feet

3. 2 x 4 feet

4. 2 x Continuous

Duration of experiment to last reaping—22 months

Manurial treatments :—

A total equivalent of 12 cwt. Sulphate of Ammonia and 1 cwt. Superphosphate per acre was applied after reappings as considered necessary.

Plot size—1/50 acre

No. of times reaped	Total Yields in tons per acre			
	2 x 2	2 x 3	2 x 4	2 x Continuous
7	48.5	48.5	48.8	45.5

F. Spacing Experiment with Elephant Grass

Planted—16/10/46

Layout —One 4 x 4 Latin Square

Spacing—1. 4 x 1 feet

2. 4 x 2 feet

3. 4 x 3 feet

4. 4 x 4 feet

Duration of experiment—12½ months

Manurial treatments :—

A total equivalent of 6½ cwt. Sulphate of Ammonia per acre applied after reappings as considered necessary.

Plot size—1/57 acre

No. of times reaped	Total Yields in tons per acre			
	4 x 1	4 x 2	4 x 3	4 x 4
6	45.3	45.4	43.1	41.0

Observation Plots

Observation plots of the following grasses and a legume were laid down in November 1945 —

1. Hay Grass (*Andropogon nodosus*)
2. Para Grass (*Brachiaria mutica*)
3. Barbados Sour Grass (*Andropogon pertusus*)
4. Molasses Grass (*Melinis minutiflora*)
5. Devils Grass (*Cynodon dactylon*)
6. "Winah" (*Teramnus uncinatus*)—legume
7. Cent-per-cent (*Panicum prostratum*)
8. Savannah Grass (*Axonopus compressus*)

Each plot was sub-divided so as to include the following treatments :—

1. Routine weeding, no manuring
2. No weeding, no manuring

3. Routine weeding plus Nitrogen
4. No weeding plus Nitrogen

Manures were applied on 24/12/46 and 28/6/47 at the rate of 2 cwt. Sulphate of Ammonia and 1 cwt. Superphosphate per acre on the first date and 128 lbs. of Ammonium Nitrate per acre on the second.

Observations :—

1. *Hay Grass* .. Responses to Nitrogen manures were moderate. Competition from weeds negligible.
2. *Para Grass* .. Marked response to Nitrogen. Weed suppression fair. Nitrogen seems to increase flowering.
3. *Barbados Sour Grass* .. Responses to Nitrogen uncertain. Weed suppression good, but some competition from Hay Grass.
4. *Molasses Grass* .. Withstood drought well. Weed competition negligible but establishment of plots unsatisfactory.
5. *Devils Grass* .. Marked response to Nitrogen. Weed suppression not satisfactory. Much "Winah" in unweeded plots.
6. "Winah" .. Died back in the drought. Weed suppression very poor. Colour response to Nitrogen. This legume is not recommended for planting in pure stand, but might be inter-planted with a tall grass such as Elephant Grass.
7. *Cent-per-cent* .. Died back during the drought. This grass was abandoned and the plot used to establish a small area of Alfalfa. The Alfalfa was planted partly from cuttings and partly from seed collected in the nursery. Propagation by seed (which was not removed from the pods) was good. Growth has been fair.
8. *Savannah Grass* Slight response to Nitrogen. Weed suppression was poor.

Seed of the following grasses and legumes, kindly supplied by the Imperial College of Tropical Agriculture, was sown, in observation plots on a calcareous loam on 28th November, 1947.

Name	Germination of acid-treated seed	Germination of untreated seed	Germination of seed soaked water	Growth Notes and Remarks
<i>Indigofera endecaphylla</i> (Trailing Indigo) ..	v. good	v. poor	—	Growth vigorous Ground being covered
<i>Indigofera subulata</i> ..	good	v. poor	—	Growth fair but not vigorous
<i>Centrosema pubescens</i> ..	good	poor	—	Fair growth but not vigorous
<i>Clitoria ternatea</i> (Blue pea) ..	fair	fair	—	Vigorous growth Very promising
<i>Pueraria phaseoloides</i> (Tropical Kudzu) ..	v. poor	v. poor	—	Growth extremely slow and plants yellow; may be intolerant of calcareous soils

Name	Germination of acid-treated seed	Germination of untreated seed	Germination of seed soaked in water	Growth Notes and Remarks
<i>Stylosanthes guyanensis</i>	good	fair	—	Practically no growth at all. May be intolerant of calcareous soils.
<i>Alysicarpus rogosus</i>	v. good	poor	—	Good growth of stem and seed but little foliage.
Black Soya Bean ...	—	—	v. good	Seeding well but plants very small.
Yellow Soya Bean ...	—	—	v. good	Seeding extremely well but plants very small.
<i>Dolichos Hosei</i> ...	v. good	—	—	When planted in seed-box, growth was good. Since transplanted growth has fallen off.
Grasses				
Kyasuawa Grass ...	—	slow	—	Growing vigorously and covering ground well.
Jaragua Grass ...	—	—	—	Failed to germinate.
Tobago Crownland Grass	—	—	—	Failed to germinate.

Hay-Making

Some 30 tons of hay was made from 20 acres of Antigua hay grass (*Andropogon nodosus*), cut about four weeks after the commencement of flowering. Earlier cutting would have been desirable but was impracticable. Hay of this type which had been stored in a barn for two years, was readily eaten by stock, although analyses of samples of these hays, performed at the Imperial College of Tropical Agriculture showed that even the best was of rather indifferent quality. The range of values for these hays are shown in Table XVI, along with the figures of some other hays for comparison.

TABLE XVI
Comparative Analyses of Certain Hays

	Antigua Hay Grass	Good Meadow Hay: Europe	Hay: East Africa.	Mature Hay: India
Total dry Matter %	89.47—91.08	85.2	89.2	87.0
Moisture %	8.92—10.53	14.8	10.8	13.0
On Moisture free Basis:—				
Ash %	8.66—12.31	8.0	10.3	10.1
Crude Protein %	2.33—4.04	10.2	7.9	2.4
Crude Fibre %	34.80—37.36	29.7	35.8	35.5
Nitrogen free extract %	47.37—51.30	49.5	44.3	50.8
Ether Extract %	1.21—2.14	2.6	1.7	1.2

N.B. The figures in the last three columns of this table are quoted from "Feeds of the World" by B. H. Schneider (1947).

Cattle

Further progress was made in the building up of the Red Poll x Senegal herd. In spite of the drought, the animals maintained good condition on the local grazing, supplemented by cut green fodder (elephant grass, guinea grass, sugar cane tops, etc.) and a production ration of concentrates in the form of a mixture of cracked maize and cotton seed meal.

The recording of milk yields on some of the half-bred Red Poll x Senegal crosses was started. Results are given in Table XVII. For uncompleted lactation periods the figures are very promising.

With the exception of one calf, kept as a control and only taken from its dam at night, all calves from cows whose yields are recorded were separated at birth and pail fed. All the calves so treated have done remarkably well.

TABLE XVII

Red Poll x Senegal Milk Yields

Name of Animal	Lactation Com-menced.	July lbs.	Aug. lbs.	Sept. lbs.	Oct. lbs.	Nov. lbs.	Dec. lbs.	Totals lbs.
Princess	27 July.	108	683½	682	684½	587½	496	3,241½
Gloria	1 Aug.	..	384½	400½	427	372½	354½	1,939*
Anna	2 Aug.	..	737	720	655½	510	454½	3,077
Duchess	5 Aug.	..	656½	856	858½	680½	629½	3,681
Star	14 Aug.	..	426½	888	850	725	691½	3,581
Belle	5 Sept.	..	..	949½	1,188	956½	828½	3,922½

* Also suckling calf

In order to test the possibilities of higher grade animals, a pedigree Red Poll bull imported from England has been used on some of the half-bred cows. The bull is on the small side, but his calves are promising.

The herd now comprises:—

Cows	Heifers	Bulls	Heifer Calves	Bull Calves	Total
24	11	6	5	9	55

In addition a Holstein bull is kept at stud for use on privately owned cows.

Horses

Two locally purchased brood mares "Royal" and "Queen" gave birth to two fillies both sired by the French Canadian Light Draught stallion "Cemelon de Cap Rouge". Both mares have been returned to stud.

The above mentioned stallion and a similar type mare "Nelly de Bagot" continue to keep in excellent condition. The latter gave birth to a colt and has been returned to stud. The colt has progressed very satisfactorily.

Donkeys

The pure bred Kentucky Jack "Dan Kiger" has been used on both horses and donkeys. He was kept in prime condition throughout the year.

One jack and one janet foal of his were born on the Station during the year.

Sheep

Work was continued with the crossing of Black Head Persian and local sheep with a view to combining the mutton qualities of the former with the fertility of the latter. Both half-breds and three-quarter bred kept in good condition on the rather indifferent grazing. There were 40% of twin births. At the close of the year the flock consisted of:—

Rams	Ewes	Ram lambs	Ewe lambs	Total
2	22	9	21	54

Of these 41 were grades and 13 native type sheep.

Stud Services at the Station during 1947

The following services were recorded during the period under review:—

<i>Stud Animals</i>	<i>No. of services</i>
Pure Bred Holstein "Gandhi"	68
High Grade Holstein "Don Q"	73
Canadian Stallion "Cemelon de Cap Rouge"	38
American Jack "Dan Kiger"	26
½ Red Poll x ½ Senegal "Bill"	7

Instructional

Seven carefully selected cadets were taken on for training as from May, three from St. Kitts-Nevis, three from Antigua and one from Barbuda.

One cadet discontinued the course soon after commencing.

The remaining cadets are being given a carefully planned twelve months' course consisting principally of practical work under supervision of senior officers. Weekly lectures were also given to cadets, and Instructors attached to the Land Settlement and Development Section.

Lectures and demonstrations at the Station have also been given from time to time to the Agricultural and Commercial Society, Primary school teachers, and school children.

11. (2) GOVERNMENT DAIRY AND AGRICULTURAL STATION BAYFORDS, ST. KITTS

This farm was established under Colonial Development and Welfare Scheme No. 288, to foster the development of animal husbandry in St. Kitts. Building work was completed during the year with the remodelling of the existing cow byre and calf houses, and good progress was made with fencing and the laying on of water supplies.

Weather conditions were quite favourable, with 57.16 inches of fairly distributed rainfall, but until the paddocks of elephant grass came into cut, fodder was short. Para grass and guinea grass are also grown. An attempt to establish alfalfa with elephant grass was a failure. Further trials are being made with pure stands of alfalfa, clovers and tropical Kudzu.

At the close of the year the farm herd comprised:—

	Holstein-Friesian bull (pure bred)	1
¾	" " " "	1
11/16	" " " (calf)	1
½	" " " (calves)	5
	Holstein foundation cows	3
	Zebu	7
	Jersey	1
	Guernsey	1
	Creole	7
¾	Holstein-Friesian	3
11/16	" " heifers	2
¾	" " " "	8
½	" " " "	13
	Creole foundation	3
	Zebu	1
	Zebu steer	1
	Total	58

The bull calves (6) will be maintained as stud bulls on the farm and Government settlements or disposed of for herd bulls as there is a good demand for grade Holstein bulls.

Statistics show that the Holstein-Friesian bull, which was imported from Canada in 1944, has sired 31 calves to date of which 15 have been bulls and 16

heifers. This animal is reserved for farm cows and heifers and the $\frac{3}{4}$ bred bull serves outside cows. Services for the year were:—

Holstein-Friesian bull	..	..	..	43
$\frac{3}{4}$ " " "	..	..	..	68
Total	..	..	..	<u>111</u>

From the month of October the system of hand rearing of calves was re-introduced with fairly satisfactory results. Milking is carried out twice daily and the quantities recorded. Butter fat testing is carried out twice a month.

The herd was T.B. tested twice during the year. There were no reactors.

Horses

A thoroughbred stallion was kept at stud for part of the year and served twelve mares.

Pigs

Berkshire and Duroc Jersey pigs are kept. During the year 5 farrows were recorded (2 Duroc Jersey, 2 Berkshire and 1 Duroc-Jersey on Berkshire), a total of 41 young pigs. The majority of these had been disposed of before the end of the year as well as some of the adult animals. Figures at the end of December showed a total of 13 head consisting of:

Boars (Berkshire)	..	..	..	1
" (Duroc-Jersey)	..	..	..	1
Sows (Berkshire)	..	..	..	2
" (Duroc-Jersey)	..	..	..	1
Piglets (2 boars, 6 gilts)	..	..	..	8
Total	..	..	..	<u>13</u>

Poultry

A flock of forty odd Rhode Island Red birds was maintained. Eighteen cockerels were sold for breeding purposes and 840 eggs for hatching, from a total production of 4,356. There was some mortality from avian leucosis.

Feeding Stuffs

Reliance upon expensive, and sometimes unobtainable, imported foodstuffs for pigs, poultry and cattle production rations gave cause for anxiety.

12. (3) SUGAR CANE EXPERIMENTS ON ESTATES: ANTIGUA

This work is undertaken by the Sugar Cane Investigation Committee in collaboration with this Department.

The following experiments were reaped during the crop season:—

	Plants	1st Ratoons	2nd Ratoons
Variety Trials	8	9	6
Observation Plots	7	5	—
Permanent Manurial Plots	2	—	—
Short Term " "	2	4	—
Spacing Plots	—	4	3
Drainage	—	—	1
	<u>19</u>	<u>22</u>	<u>10</u>

The results of these experiments were summarised, published (Antigua Experimental Scheme—Preliminary Study of Yield Data for Experiments reaped in 1947—by P. E. Turner, F. H. S. Warneford and E. R. H. Martin) and widely circulated.

The following recommendations are extracted from this paper:—

Soil Types	Recommended Varieties (per cent of total area)						
	1946			1947			
	B37172	B37161	B34104	B4098	B37172	B37161	B34104
Wetherell clays	0	0	100	50	0	0	59
Fitches clays	0	100	0	50	0	50	0
Blubber Valley loams* ..	30	30	40	0	60	20	20
Gunthorpe clays	10	60	30	34	0	66	0
Tomlinson clays	20	60	20	34	0	66	0
Otto clays	25	50	25	50	0	50	0
Lindsey clays	10	90	0	50	25	25	0
Bendal clays	50	25	25	50	50	0	0
Blubber Valley clays ..	40	30	30	50	50	0	0

* On the Blubber Valley loams accurate data as to the relative performances of B4098 are not yet available.

Of the experiments reaped those being continued as ratoons for reaping in 1948 were manured and spring counts taken. Routine work was done on 17 formal experiments and 8 observations plots were laid down in 1946 also for reaping in 1948.

Spacing Interval

On the basis of experiments reaped in previous years a spacing interval of 6 feet x 2 feet has been adopted in areas where machines can be employed for weeding between the 6 ft. rows. The results of the experiments reaped in 1947 confirm that this spacing interval can safely replace the former standards on Fitches clays, Blubber Valley loams, Gunthorpe clays, Tomlinson clays, Otto clays and Bendal clays.

Size of Dressing of Nitrogen and Phosphate Manures

Plant Cane. Experiments reaped in 1946 confirm that the optimum manurial treatment of plant cane on Fitches and Gunthorpes clays is 2 cwts sulphate of ammonia and 1 cwt superphosphate to the acre.

Ratoon Cane. Experiments reaped in 1947 indicate that the optimum manurial treatment of first ratoon cane on Fitches and Otto clays is 4 cwts sulphate of ammonia and 1 cwt. superphosphate, and on Gunthorpe clays 3 cwt. sulphate of ammonia and 1 cwt. superphosphate to the acre.

Residual Effects

The residual effects on yield of first ratoon cane, of dressing to the acre of 4 cwts. sulphate of ammonia and 2 cwts. superphosphate to plant cane, have been found to be very small on Fitches, Gunthorpe and Otto clays.

The following experiments were planted in 1947 for reaping in 1949:—

Manurial experiments with massive applications of Nitrogen and Phosphate	4
Long-term manurial experiments	1
Time of planting experiments	2
Varietal experiments	10
Varietal observation plots	9

13. (4) SUGAR CANE EXPERIMENTS ON ESTATES: ST. KITTS

Experimental work with the sugar cane crop was continued as in previous years and was carried out in co-operation with the St. Kitts Sugar Association and under the direction of Mr. P. E. Turner, M.Sc., F.R.I.C., Agronomist on the staff of the Comptroller for Development and Welfare in the West Indies.

Eighteen (18) varietal, eight (8) spacing and three (3) manurial experiments were reaped. Several experiments of the 1947-49 programme were laid down during the year. The results of the experiments were communicated to owners of estates, attorneys, managers and others in a lecture by Mr. Turner in July last, and have been published in "St. Kitts Experimental Scheme—Preliminary Report of Field Experiments Reaped in 1947" by P. E. Turner, R. E. Kelsick, E. R. H. Martin and J. N. W. Niccolls.

The following is a summary of the more important conclusions which have been drawn from the results of the experiments which were reaped during the year:

VARIETIES

The variety B37161 is taken as the standard for comparison.

B3337. There is not much to choose between the yields of sugar given by B3337 and B37161 in plant and first ratoon experiments on drier lower lands, and on middle and upper lands of intermediate rainfall. B3337 is not recommended for planting in these areas as it has consistently given juice of poorer quality than B37161.

B3337 has given smaller yields of plant and first ratoon sugar than B37161 on lower lands of intermediate rainfall and on wetter middle lands.

B3439. B3439 has given poorer total yields of plant, first ratoon and second ratoon sugar for earlier as well as later reaping on drier lower lands and on wetter middle lands.

Planting of B3439 is no longer recommended for early reaping on drier lower lands.

B34104. B34104 has given consistently poorer yields than B37161 in plant and ratoon experiments in drier and intermediate rainfall zones of the lower lands, in intermediate and wetter rainfall zones of the middle lands, and in wetter zones of the upper lands. It has given as good a yield of plant sugar as B37161 in wetter lower lands and both poorer and better yields than B37161 in upper lands of intermediate rainfall.

B34104 is now recommended for planting, in limited extent, only in deeper soils of the high rainfall zone of the lower lands and the intermediate rainfall zones of the middle and upper lands.

B38212. B38212 has given consistently smaller yields of sugar than B37161 in lower and middle lands of intermediate and high rainfall and in upper lands of intermediate rainfall.

Planting of B38212 is not recommended.

B4098. B4098 has exceeded B37161 in yield of sugar on drier and wetter lower lands and in intermediate rainfall zones of the middle and upper lands. Nurseries of B4098 should be established in these areas.

B4098 has given smaller yields than B37161 on lower lands of intermediate rainfall and on wetter middle and upper lands. B4098 uprooted on an extensive scale in these areas and the canes dried out and died.

B40102. B40102 has given smaller yields than B37161 on lower lands of low and intermediate rainfall, on middle lands of high rainfall and on upper lands of intermediate rainfall.

Planting of this variety is not recommended.

B40105. B40105 has given larger yields of plant and ratoon sugar than B37161 on drier lower lands and on upper lands of intermediate rainfall. Nurseries of B40105 should be established in these areas.

B40105 has given smaller yields of plant and ratoon sugar than B37161 on lower lands of intermediate rainfall and on middle and upper lands of high rainfall.

B41211. In the single experiment, so far harvested with B41211 this variety has given a larger yield of plant sugar than B37161 on drier lower lands. Nurseries of this variety should be laid down.

Summary of Planting Recommendations

Elevation	Rainfall	Recommended varieties in 1947
Lower lands ..	Low Intermediate High	B37161 B37161 B37161 for maincrop. Some B34104 in deep soils on fringe of middle lands of high rainfall
Middle lands ..	Low Intermediate High	B37161 B37161. Some B34104 in deeper soils. B37161
Upper lands ..	Low Intermediate High	B37161 B37161 in shallower soils B34104 in deeper soils B37161

The establishment of nurseries of B4098, B40105 and B41211 is recommended in case the need arises for planting these varieties on a commercial scale.

Spacing Interval

On drier and wetter lower lands, and on middle lands of intermediate rainfall, loss in yield has resulted from crowding the stools in the row. Any effect on yield of increasing the distance between the rows from 5 ft. to 6 ft., with narrow intervals in the row, appear to be small.

On wetter middle lands there is nothing much to choose between the yields obtained from 5 ft. and 6 ft. rows. Continuous planting in the row has given as large yields of plant cane as intervals of 3 ft. in the row. In one experiment 4 ft. rows have given larger yields of plant and ratoon cane than 5 ft. and 6 ft. rows.

These results were obtained for the variety B37161 under conditions of unusually low rainfall.

Manures

Kind of Nitrogen. Neither sulphate of ammonia nor nitrate of ammonia gave rise to gain in yield of plant cane in experiments on lower and lower-middle lands.

It is not uncommon in the B.W.I. for plant cane to fail to respond to treatment with nitrogen, in dry years, on soils which dry out quickly.

Long term Manurial experiment. Six crops have been reaped on the experimental area which is situated in the drier lower lands.

No gain of plant cane has been found to result from applying sulphate of ammonia in addition to pen manure. Application of 3 cwt. sulphate of ammonia per acre to each ratoon on the plots penmanured as plant cane has given rise to a total gain of 22.34 tons cane over the three ratoon crops, or 7.45 tons cane per ratoon crop.

The plots dressed with artificials show no ill effects from repeated treatments with these measures.

New Varieties from The B.W.I. Central Sugar Cane Breeding Station at Barbados

Nurseries of the following varieties were established at three stations early in the year: B43337, B43235, B4362, B43391, B43330, B43229, B4306, B43234, B4327 and B43218.

The following new varieties were received in May and are being multiplied at the Experimental Station, La Guerite: B44111, B4408, B44254, B44341, B4409, B44165, B44269, B4425, B44182, B44278, B4466, B44244 and B44279.

14. (5) SUGAR CANE EXPERIMENTS: MONTSERRAT

As steps towards the improvement of the sugar cane industry quantities of cane plants of the varieties B34104, B37161 and B4098 were imported from Antigua; a cane variety and a cane manurial experiment were laid down; and cane nurseries were established.

15. (6) CENTRAL SEA ISLAND COTTON STATION: MONTSERRAT

The 1947 annual report of the Montserrat Central Sea Island Cotton Breeding Station has been prepared and submitted for publication to the Empire Cotton Growing Corporation. Twenty non-replicated progeny rows were grown from selected plants from ten of last year's progenies. Selfing of this material was carried out as usual. A small bulks trial was also used as a check on the yielding capacity of the progenies. Analysis of the data obtained from this trial revealed two comparatively low yielding bulks. The progenies which formed those bulks also gave unfavourable spinning tests reports, and they will be discarded from the 1948 progeny material.

The routine seed multiplication programme was carried on, and pedigree seed was supplied to other cotton growing islands of the Leeward Islands and to British Honduras.

The N.P.K. manurial trial series was continued. Some response to nitrogen at the lower level of application was obtained on the Richmond lithosol soil. In a pen manure trial conducted at the Otway Settlement the pen manure treatment yielded 68 per cent more than the control. A selenium trial to test the rate and effectiveness of applying selenium to the plant to control insects without adversely affecting the plant was carried out at the Grove Botanic Station. Pink bollworm infestation was reduced in the selenized plots, but complete control was not obtained. There were no significant differences in yield due to the uptake of selenium.

16. (7) COTTON: NEVIS

The cotton manurial trials, which were laid down in 1946, were reaped but no significant results were obtained. New trials were started at the following centres: Prospect, Cades Bay and New River.

17. (8) MISCELLANEOUS

A Soya Bean, three varieties of Red Bean, two of Sweet Potatoes (B44 and B52 from Barbados) and a number of leguminous forage plants of the clover family were imported to St. Kitts for trial.

SECTION III

18. EXTENSION AND DEVELOPMENT WORK OF THE DEPARTMENTS

As usual, officers in the Departments gave much time to the work of various Committees, Societies and Associations, Village Councils, etc., connected with agriculture, in addition to supervising the various forms of extension work detailed in succeeding paragraphs.

ANTIGUA

19. GREENCASTLE NURSERY AND FRUIT FARM

This farm is maintained to supply planting material of various crops and ornamentals. Some 10 acres were occupied by the multiplication of new sugar cane varieties.

The propagation of fruit trees was seriously handicapped through the year by the protracted drought.

Budding and grafting could not be successfully done until after September, when there was some improvement in the rainfall on this part of the island. From September to the end of the year 350 Julie mangoes, 200 citrus and 50 Avocado pears were successfully budded and 1,000 breadfruit plants propagated from root cuttings. All of the above will be ready for distribution in 1948.

About 9 acres of young grafted mangoes and budded citrus planted out in 1945-1947 were maintained and older bearing orchards pruned, weeded etc. as required.

20. REHABILITATION OF ESTATE AGRICULTURE

Under Colonial Development and Welfare Scheme No. 465, funds were made available for the assistance of estate agriculture.

The following issues were made during the year to three parties including one new applicant:

<i>Sub-head</i>	<i>Loan</i>	<i>Grant</i>	<i>Total</i>
	£	£	£
(a) Purchase of Implements ..	2,003 0 0	668 0 0	2,671 0 0
(b) Improvements to Estates ..	2,002 8 0	700 16 0	2,703 4 0
(c) Transport Expansion ..	250 0 0	78 0 0	328 0 0
(d) Livestock & Dairy ..	280 0 0	140 0 0	420 0 0
	<u>4,535 8 0</u>	<u>1,586 16 0</u>	<u>6,122 4 0</u>

Issues and repayments from the commencement of the Scheme up to date are as follows:—

<i>Sub-Head</i>	<i>Loan</i>	<i>Issues Grant</i>	<i>Total</i>	<i>Repaid</i>
	£	£	£	£
(a) Purchase of Implements ..	7,567. 0	2,512. 0	10,079. 0	754. 17 7
(b) Improvements to Estates ..	8,548. 8	2,786. 16	11,335. 4	711. 16 1
(c) Transport Expansion ..	3,650. 0	1,217. 0	4,867. 0	296. 11 6
(d) Livestock & Dairy ..	1,800. 0	900. 0	2,700. 0	240. 8 4
	<u>21,565. 8</u>	<u>7,415. 16</u>	<u>28,981. 4</u>	<u>2,003. 13 6</u>

The administration of the Scheme is the responsibility of a Committee, appointed by His Honour the Administrator, of which the Director of Agriculture, Leeward Islands, is Chairman and the Agricultural Superintendent, Antigua, Secretary.

In one case a borrower failed to live up to the conditions of the agreement entered into and was made to refund the loan forthwith.

All other issues have been used to the satisfaction of the committee and repayments made on the due dates.

21. LAND SETTLEMENT AND DEVELOPMENT

Under Colonial Development and Welfare Scheme No. 282, a Land Settlement and Development Board was set up in March 1945 to acquire land for leasing to suitable tenants, mainly peasants, and to control the development of it. The Department of Agriculture is charged with carrying out the policy of the Board and administering extension services within settlements established on its properties. There exist, in addition to these settlements, a number of older ones, in which the settlers have bought, or are buying on instalment terms, the freehold of their plots. The Department has always been concerned with the welfare of these older settlements.

Given below is a list of all the "Settlement" areas with which the Department of Agriculture or/and the Land Settlement and Development Board are concerned.

<i>Settlements</i>	<i>Total Area (Acres)</i>	<i>No. of Allottees</i>	<i>Principal Feeder Villages or Town</i>
1. Clare Hall	226	126	Clare Hall, St. Johns, St. Johnston's Village
2. Skerrits	100	19	St. Johnston's Village
3. Sawcolts	233	70	Sawcolts, Swetes
4. Wallings	430	25	Wallings, Sawcolts
Sub Total A	989	240	
5. Piccadilly	3,000 approx.	626	English Harbour, Falmouth, Liberta, All Saints, Bethesda
6. Matthews	729	126	All Saints, Swetes, Buckleys
7. Jonas	261	62	Freemans Village, Pares, All Saints
8. Greencastle	544	110	Grays Farm, Grays Hill, Hamilton, St. Johns
Sub Total B	4,534	924	
9. The Folly	22	14	Swetes, The Folly
10. Mannings	250	30	Freetown, Newfield
11. Sherriffs	400	<	
12. Indian Town	22		Freetown, Willikies
Sub Total C	694	44	
13. Coconut Hall	257	62	Parham, Seatons
14. Southern Settlements	1,385	88	Old Road Urlings
15. Langfords (part of)	62	48	Cedar Grove
16. Royals	82	<	
17. Marble Hill	175	85	Cedar Grove
18. Rooms	500	132	Willikies, Seatons
19. Comfort Hall (part of) ..	500	58	Willikies, Seatons
20. Brecknocks	Unsurvey'd	30	Swetes
21. Harts and Royals* ..	68	16	Cedar Grove
22. Orange Valley	707	90	Johnson's Point, Bolans
23. Tremontania	327	107	Old Road
24. Belvidere, Greencastle, etc.	1,635	257	Grays Farm, Grays Hill
Sub Total D	5,698	973	St. Johns
25. McKinnons	140	51	
GRAND TOTAL ..	12,055	2,232	

< Used for grazing.

* Part of this area is reserved for village extension.

Property 25 was purchased during the year.

Settlements 1—8 are under freehold tenure. Most of the land on 1—4 has already been alienated while land on 5—8 is in process of alienation.

Draft legislation for leasehold tenure with compensation for unexhausted improvements, has been approved, except for minor details, and will probably be put into effect during 1948. In the meantime an annual rental is being charged.

Settlements 13—25, with the exception of Brecknocks were under the control of the Land Settlement and Development Board throughout the year. Late in the period under review approval was given to the Board assuming responsibility for all settlements in the island.

Numerous repairs and improvements to buildings, water supplies and roads were carried out at a number of settlements.

General Development

About 140 acres of wooded land at McKinnon were given out to ex-service men and dockside workers. A large portion of this area was cleared during the year and prepared for economic use.

Settlement Committees

A settlement committee was formed at Piccadilly bringing the total at the end of the year to six. These committees are elected by settlers at general meetings and function for a period of about one year in an advisory capacity to the Department.

22. SOIL, WATER AND FOREST CONSERVATION

As in previous years a forestry protection service was maintained. Extensive clearing of steep hillsides was prevented but the illegal clearing of small patches for the burning of charcoal etc. is difficult to control.

A total of 251 acres of peasant lands and 220 acres of estate lands were contoured during the year on eight settlement areas and 5 estates. The contouring of 445 of the 471 acres referred to above necessitated the construction of 76,678 yards of bund. Plants used for making bunds were chiefly cane (variety B34104), Guinea grass, Vetiver grass and Elephant grass.

Financial assistance was given to a number of villages or settlements whose inhabitants made an equivalent contribution, in the form of labour, towards the improvement of local water supplies.

23. DISTRIBUTION OF PLANTING MATERIAL

Plant and Seed Distribution recorded from all departmental Stations, i.e. Central Experimental Station, Greencastle Fruit Farm & Nursery, and District Stations —

Cane cuttings (new varieties)	911,221
Sweet Potato vine cuttings (variety B44)	2,007,400
Elephant Grass cuttings	145,000
Guatemala "	26,200
Tomato seedlings	52,500
Cabbage "	16,740
Onion "	850
Cauliflower "	725
Budded citrus trees	107
Grafted mango "	41
Grafted Avocado pear trees	60
Breadfruit trees	64
Other Fruit trees	16
Ornamental Trees & Plants	942
Maize seed (on cob)	5,735 lbs
Peas & Beans	1,540 "

24. SHOWS

An Agricultural Exhibition was held in Barbuda under the auspices of the Barbuda Agricultural Society.

Twenty-six well-attended cinema shows were given in Antigua jointly by the Departments of Education and Agriculture in rural districts and elsewhere. Films of agricultural as well as general educational value were shown.

25. CREDIT FACILITIES

A total of £8,845. 3s. 4d. was issued as loans on 1,317 occasions as compared with £1,927. 10s. 11d. in 1945 and £2,213. 9s. 3d in 1946. Repayments in respect of loans issued in previous years amounted to £3,449. 6s. 4d.

Loans are recommended, and resulting work carefully supervised, by field officers and issued and collected by the Marketing Section.

Issues during 1947 were classified as follows :—

Loans for general agricultural purposes and fertilizers	£8,688	14	5
„ „ Housing	112	8	11
„ „ Purchase of Livestock	44	0	0
	£8,845	3	4

General agricultural loans, including loans for tractor ploughing are issued (usually in instalments) for work done and inspected by the staff. Fertilizer loans are given in kind only and housing loans chiefly in the form of building material.

Ordinary loans are secured by first liens on crops marketable through the Marketing Section. Housing loans are further secured by Bills of Sale on the houses built or repaired.

A first lien on a cotton crop is not generally acceptable security owing to the ease with which this crop can be sold to buyers other than the Marketing Section.

In order to increase security and enable loans to be issued for cotton cultivation certain peasants on the Piccadilly Settlement area formed a “Loans Guarantee Group” under the guidance of the District Instructor and with the generous help of the Social Welfare Department. Each member is obligated to buy at least one share valued at ten shillings. Each share will entitle him to a Government loan not in excess of £5 on the basis of work done and vouched for by elected Group leaders and the District Instructor. All share values are deposited in the Government Savings Bank, and by agreement signed by all members, these savings can be used to make good any default on the part of any one or all the group. At the end of the cotton season shares are redeemable plus interest less any sums paid out to make good defaults. 133 “shares” were credited to 88 “shareholders” and the value of the shares—£66. 10s. deposited in the Government Savings Bank. Loans to the extent of £686. 7s. 2d. (approximately 10 times the value of the deposits) were issued.

These loans have resulted in a marked increase in the quantity and standard of cotton cultivation in the district.

Rehabilitation of Ex-Service Men

From November 1946 to the end of 1947, 43 returned soldiers have been settled on about 175 acres. Liberal loans on especially easy terms have been granted to these men together with special instruction and supervision. Five of them who have made outstandingly good progress were assisted in putting houses on their holdings. A few others have made fairly satisfactory progress but the majority have up to date not made progress commensurate with the financial and other assistance given.

26.

MARKETING

Cane

The principal activities of this section, i.e. the marketing of peasants’ canes and the issuing and collection of loans again increased markedly during the year.

18,096 tons of cane were handled as compared with 14,448 in 1946 and 8,008 in 1945.

The districts concerned and the crop from each is shown in the following table :—

TABLE XVIII

<i>District</i>	<i>Tons</i>	<i>Cwt.</i>	<i>Qrs.</i>
Belvidere	3,336	5	2
Cades Bay	134	18	1
Coconut Hall	576	8	3
Clare Hall	1,206	8	2
Folly	121	7	2
Golden Grove	348	2	2
Greencastle 1	4,318	9	0
Greencastle 2	628	10	1
Jonas	1,625	10	0
Marble Hill, etc	1,075	4	2
Matthews	2,224	12	2
Mill Hill	544	13	2
Orange Valley	811	9	1
Piccadilly	291	19	0
Sawcolts	436	9	0
Rooms	249	8	1
Mannings	166	7	1
Total	18,096	3	2

Canes from the above-mentioned districts except Mannings are delivered to the Antigua Sugar Factory. Canes from Mannings are normally handled by the Montpelier Factory, but owing to mechanical trouble there, some of the canes from the district had also to be handled by the Antigua Sugar Factory.

Payments during the year amounted to £29,107 13s. 7d.

Group marketing with the use of siding scales was carried on satisfactorily at Clare Hall and Matthews. An additional scale and weighing office for use during the 1948 reaping season was installed at Marble Hill.

Cotton

In addition to exercising very close supervision over the purchasing, handling and ginning of the *entire* cotton crop, this section offered facilities to peasants for the marketing of their crop. About 5/8 of the total crop was handled on this basis. A total of 45,086 lbs. of clean seed cotton and 5,060 lbs. stains were purchased at 4 centres—3 in rural districts and one in St. Johns. A first payment of 6d. per lb. clean seed cotton was made, and after all expenses deducted a final payment of 1d. per lb. Stained seed cotton was purchased outright at 1½d. per lb.

14,042 lbs. of clean lint (31.1%) and 1,430 lbs. stains (28.5%) resulted.

The entire crop of clean lint amounting to 77,376 lbs. was shipped to the Board of Trade through this section and realised 2/3 per lb. Stains were sold locally at 1/2 per lb.

Maize Factory

Owing to the dry weather, the maize crop was a small one. Consequently the maize factory did little business, as the following figures show :—

Maize on the cob bought	31,329 lbs.
Maize meal made	15,778 "
Bran made	2,802 "
Cob maize shelled for owners	18,063 "
Maize dried	21,716 "
Maize cracked	29,107 "

Fruits and Vegetables

Owing to lack of cold storage facilities, this section operates under great difficulties, but successful small shipments of tomatoes to Trinidad were made, and about 10 tons of other miscellaneous produce handled.

Finances of The Marketing Section

It is the policy of Government to try to make the Marketing Section self-supporting. This object was not quite achieved in 1947, but the loss after taking all charges, including rent, depreciation and personal emoluments into consideration was only £625. This figure is arrived at without taking any credit for the large amount of work done in connection with the issue and collection of loans, which contributes substantially to ability of peasants to produce.

27.

ST. KITTS—NEVIS

The extension work of the department was continued as in former years. The results of sugar cane experiments were published and were discussed in detail at a meeting of attorneys, managers and overseers of estates.

The Agricultural Superintendent gave a lecture to primary school teachers, at their annual vacation course early in the year, on the development of land settlement in the Presidency.

At Sadlers a demonstration area has been started in co-operation with an allottee to investigate the value of elephant grass, for cutting and grazing, for improving the fertility of overcropped land.

The Agricultural Instructors continued extension work on soil conservation and increased production of local foodstuffs.

A monthly bulletin is issued by the Department in St. Kitts.

In Nevis, Agricultural instruction to the senior classes of four primary schools has been started in co-operation with the Education Officer and the teachers of the schools. Four members of the field staff were detailed for this work and attend the school in their particular district once a fortnight and give a prepared lecture followed by practical agricultural demonstrations in the field.

A letter of advice to peasants in Nevis was issued monthly and posted up throughout the island.

28.

MARKETING AND CREDIT FACILITIES

The Agricultural Superintendent continued to be responsible for the purchase of the cotton crop on behalf of the Cotton Control in the United Kingdom. The shipping of the cotton crop in Nevis was arranged by the Marketing Officer.

The marketing of allottees' canes on the settlements at Fahies and Sadlers in St. Kitts was carried out by the agricultural Instructors.

Surplus maize was purchased by the Department from the estates and a small quantity was also bought from allottees on the settlements.

In Nevis the marketing of the cotton and cane crops and surplus grain was undertaken by the Marketing Department.

Allottees on land settlement estates in St. Kitts continued to be supplied with artificial manures, agricultural implements and planting material on terms of credit. Allottees are also given assistance with the haulage of pen manure, filter press mud and megass for use on their plots.

In Nevis peasant farmers obtained on credit through the Marketing Department insecticides, artificial manures, cotton seed for planting and cane plants and to approved applicants on land settlements cash loans up to £3 per acre were given to assist them with their cane cultivation.

The small mill at Hardtimes settlement was used to grind maize for peasants at a charge of $\frac{3}{4}$ d. per lb.

The muscovado plants at the Hamilton and New River settlements were again operated to manufacture muscovado sugar for local consumption.

The Department also operates a cotton ginnery in Nevis.

29. AGRICULTURAL DEVELOPMENT IN NEVIS

Under Colonial Development and Welfare Scheme D. 54 improvement in the water supplies at Prospect, Maddens and Nisbetts was effected and financial assistance was provided towards the upkeep of stud animals.

From the funds of this scheme the salaries and transport allowances of the Agricultural Officer, Marketing Officer, Marketing Assistants, Junior Agricultural Instructors and a Clerk were paid.

30. AGRICULTURAL DEVELOPMENT IN ANGUILLA

Under Scheme D. 687 twenty-seven acres of land were acquired by Government in May for the development of an agricultural station and demonstration centre. Good progress has been made with the erection on the site of a house for the Agricultural Instructor but the work was held up at the end of the year by a shortage of building materials and fencing wire.

31. LAND SETTLEMENT

St. Kitts

Progress has continued at the Fahies and Sadlers settlements. There was an increase in the average yield of allottees' canes at Fahies over the yields of the previous crop. At Sadlers cane yields were slightly less than those of 1946 as a result of the very dry conditions on this estate during the year.

Soil conservation work was continued on both settlements with good results.

Harris estate has been contoured by the Agricultural Instructors and permanent bunds of khus-khus grass established at 10 ft. vertical intervals. 37 allotments of 3 acres each were given out to peasants during September. The land has been taken up on a rental basis and on similar terms to the land at Sadlers.

Five acre allotments have been rented to three ex-service men under the scheme for the Presidency to assist these men to establish themselves on the land. Under the scheme the men are able to obtain from Government cash loans to the extent of £10 per acre. The three men are hard working and have made a promising start on their allotments.

Nevis

There are ten land settlement areas in Nevis which are supervised closely by a resident Agricultural Instructor and a Ranger. The rent varies between 10/- and 16/- per acre per annum according to the fertility of the soil.

The figures below give the number of available plots on each settlement and the number occupied, the size of holding and the rental value.

Settlement	Total No. of allotments		Number occupied		Size of Holding	Rent per acre	Remarks
	Free-hold	Lease-hold	Free-hold	Lease-hold			
Hamilton ..	200	72	128	40	approx. 3 acres	12/-	Cane & Vegetables Very little cotton
Low Ground ..	80	10	70	8	3 "	12/-	All crops
Prospect ..		44		44	4 "	12/-	All crops, chiefly cotton
Cades Bay ..		38		37	3 "	12/-	All crops
Nisbetts ..		27		27	3 "	16/-	
						10/-	All crops
Hardtimes ..		29		28	3 "	12/-	Cane & Vegetables
Spring Hill ..		32		1	3 "		
New River		224		224	1½ "	15/-	" " " " " " " " " " " "
							All crops, chiefly cotton
The Valley ..		25		23	1½ "	8/-	Vegetables
Maddens ..		216		216	1 "	15/-	All crops

The majority of the allottees cultivate their land well and although the annual income derived from their plots is small, most of them keep livestock and when their resources are low they sell charcoal, vegetables, firewood and milk in St. Kitts or in the local market. Moreover they usually grow the bulk of their own food.

The monetary returns from these activities have been greatly reduced this year owing to the abnormally dry weather. To provide some additional work for the labouring population Government allocated funds for the cultivation of cane, cotton and food crops on unoccupied land at Spring Hill and New River.

Twenty-one acres are being developed at New River for cotton seed multiplication and food crops, and during 1947 ten acres were planted in cotton and another three acres in corn and peas.

At Spring Hill twenty acres have been planted in cane but owing to the dry weather in November and December, it was not found possible to plant food crops.

The following figures show the total indebtedness of the allottees on each settlement on account of rents and/or instalments unpaid.

Total Amount of Indebtedness to Government

Settlement	As at Dec. 31st 1946			As at Dec. 31st 1947			Increase			Decrease		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Hamilton ..	623	17	6	621	3	9½				2	13	8½
Low Ground ..	301	4	5½	304	16	0	3	11	6½			
Prospect	105	12	11	126	5	4½	20	12	5½			
Cades Bay ..	115	4	5	122	19	2	7	14	9			
Nisbetts	40	6	0	53	4	0	12	18	0			
Hardtimes ..	22	18	8	40	11	2	17	12	6			
Spring Hill ..	11	8	10½	11	8	10½						
New River ..	23	16	9½	95	19	10	72	3	0½			
The Valley ..	2	12	8½	7	6	0	4	13	3½			
Maddens ..	—											
Low Ground pasturage ..	4	1	8½	4	5	10½	4	2				
Stoney Grove pasturage ..	10	3	4	6	11	6				3	11	10
	1,261	7	4½	1,394	11	7	139	9	9	6	5	6½

During the year a scheme to assist ex-service men to acquire holdings on Government land settlements and to provide them with assistance by cash loans was brought into operation. Fourteen Nevisians and twenty-four men from St. Kitts applied for land and so far twenty-two out of this number have developed their holdings (4 acres) and planted cotton, cane and some food crops. Some of the men's cotton plots at Prospect settlement, which were planted early, are looking well. Nearly all the men from St. Kitts have given up their holdings. On the whole the Nevisians have done well and for the present most of them are working their plots. It remains to be seen what will happen next year when loan money is no longer available.

Cash loans up to £10 per acre were granted to the ex-service men by Government and the loans are repayable within a period of five years. The total amounts advanced to the men during 1947 at the various settlements are shown below:

Settlement	No. of plot holders	Cash Loan			Sprayers etc.			Total
		£	s.	d.	£	s.	d.	
Prospect ..	17	693	1	0	35	19	3	729 0 3
Cades Bay ..	2	69	14	10	2	12	4	72 7 2
New River ..	2	80	0	0				80 0 0
Nisbetts ..	3	103	14	4				103 14 4
Spring Hill ..	14	138	16	6	2	3	8	141 0 2
Total ..	38	£1,085	6	8	£40	15	3	£1,126 1 11

At Spring Hill 13 men have left their plots after cleaning the land of light bush and stones and two men at Prospect have done likewise.

All the other ex-soldiers on each settlement up to the end of 1947 have shown continued interest in their plots and most of these men have fairly good crops of cotton and cane established.

32. STUD ANIMALS ON GOVERNMENT SETTLEMENTS

St. Kitts

One $\frac{3}{4}$ Holstein-Zebu, and one grade Holstein-Zebu bull, one pure bred Berkshire boar and one grade Black Head Persian ram sheep are maintained on the settlements. The services by these animals for the year are given below:—

Bulls	..	..	..	..	38
Boar	..	..	..	..	29
Ram	..	..	..	..	10

Nevis

Six stud centres are maintained in Nevis and the recorded services are as follows:

1 Stallion	French-Canadian	8 services
5 Bulls	4 Grade Zebu and 1 Grade Holstein	175 „
3 Jack Donkeys		70 „
2 Ram Sheep	Grade Black Head Persian	120 „
2 Buck Goats		72 „
4 Boar Pigs	Grade Large Black & Duroc Jersey	37 „
		482 „

33. SOIL, WATER AND FOREST CONSERVATION

St. Kitts

On the Fahies settlement 25,676 ft. of permanent contour lines were established and banded with khus-khus grass. At the Sadlers settlement 18,160 ft. of permanent lines were established chiefly in the ground provision area on the upper lands. At Simpsons 4,270 ft. of permanent lines were established and 2,000 ft. of temporary lines. Harris estate was contoured and 14,190 ft. of permanent lines established at 10 ft. vertical intervals. Approximately 40,000 ft. of temporary lines were established through cane and ground provision lands. The lines are banded with khus-khus grass and a fair number remain to be planted. Agricultural Instructors rendered assistance to estates with contour tillage of 153 acres of cane land. It is estimated that soil conservation measures have been adopted in connection with approximately 800 acres of land under Government control in addition to a large acreage with contour tillage on the cane lands of estates.

Nevis

In addition to the extension of contour bunding throughout the island at 6 ft. vertical intervals, contour storm drains of adequate dimensions have been established in many localities.

Some 145 acres were protected by this means and a further 96 acres were cultivated on the contour.

A satisfactory check on illicit felling of trees was maintained.

34. PLANTING MATERIAL

The cane nurseries in various parts of the island were continued and supplied cane growers with planting material.

For St. Kitts 150 lb. of pedigree cotton seed is obtained by the Department each year from the Cotton Station in Montserrat. This is multiplied on seven acres of land at La Guerite. In spite of the very dry weather in the early months of 1947 a yield of 205 lb. clean lint per acre was obtained.

In Nevis the plots at the Experimental Station, Prospect, were used mainly for the multiplication of cotton seed for planting the Island crop, but as a result of the unfavourable season very little first multiplication seed was reaped last March. In September the usual 300 lb. of pedigree seed was received from Montserrat and the bulk of this was planted at New River where a new seed farm has been established.

Up to the end of the year cotton prospects were good and it is anticipated that a good yield will be obtained from both New River and Prospect multiplication plots in 1948.

The supply of vegetable seeds and seedlings to the public was organised by the Department.

35. VETERINARY SERVICES

The St. Kitts veterinary panel scheme which was inaugurated in 1945 under Colonial Development and Welfare Scheme D.422 continued in operation, but was handicapped owing to the long interval between the departure on transfer of one Veterinary Officer and the arrival of his relief. It was only during the last three months of the year that there was a resident Veterinary Officer. Prior to his arrival a private practitioner was called in as required.

Owing to the withdrawal from the panel system of the largest contributor, it will not be possible to continue the scheme in its present form in 1948.

36. MONTSERRAT

The Agricultural Extension Service staff, organised on a district basis, and including three Agricultural Instructors and an Agricultural Demonstrator, made considerable efforts to keep in touch with peasants throughout the island. The "follow-up" of the progenies of the Department's stud animals was given attention.

The guidance and control of the settlers at the Otway Peasant Land Settlement takes a good deal of time and patience, but there is evidence that many of them are beginning to appreciate the importance of soil conservation, crop rotation, the preparation and use of pen manure and such desirable practices.

37. GROVE BOTANIC STATION AND STUD CENTRE

The stud animals were removed from the Grove to the Otway Settlement about the middle of the year. The Station continued to serve for the demonstration of soil conservation measures, and as a source of planting material of various food crop, fodder and ornamental plants.

38. BRADES STUD CENTRE

The greater part of the 10 acres of the Brades Stud and Investigation Centre is established in contour strips of elephant grass and other fodder grasses. It is evident that the fertility of the soil at the Centre is so low that it is only by careful and continued treatment that it can be built up, and various methods, having this as their object, are being tried. A boar and a ram stood for service at this Centre throughout the year, and a bull for part of the year. A few piglets were raised at this Centre and sold.

39. OTWAY STUD AND DEMONSTRATION CENTRE

For the greater part of the year two bulls and a boar, and after the transfer of the stud animals from the Grove, a ram, stood for service at

the Otway Settlement. A small Demonstration Peasant Holding, a two-acre Crop Rotation Experiment and about four acres of Sugar Cane Nurseries have been started. In an effort to find a variety of tomato more suitable for the export trade than "Marglobe" a trial comparing this with "Grothens Globe" and "Rutgers" was carried out. The results were not conclusive.

40. **STUD SERVICES**

Services by the Department's stud animals for the year were as follows:—

Bulls	Boars	Ram Sheep
42	63	42

Nineteen Large Black piglets were raised at the Department's Centres and sold to peasants and others for the improvement of the standard of pigs in the Presidency.

41. **MARKETING AND CREDIT FACILITIES**

Generally the huckster trade or other private shippers handled such vegetables and provisions as were available for export. Such exports were controlled by legislation, and export was permitted only when it appeared that the Island could reasonably well spare the produce.

The Government mill ground or cracked about 9 tons of maize for private individuals and about 2½ tons for Government Departments.

The Cold Storage Depot operated throughout the year for the manufacture of ice, and the cool storage of vegetables for shipment and meat and fish for local use.

The Government Marketing Depot imported and retailed vegetable seeds and handled planters' requirements of vegetable packing materials, and, as agents for the Ministry of Supply, dealt with the whole crop of clean lint, and also shipped part of the crop of stained lint.

At the Otway Peasant Land Settlement the Government made advances to settlers while they were cultivating their cotton crop, recovering the money advanced from the payments for seed cotton.

42. **OTWAY PEASANT LAND SETTLEMENT**

The Otway settlement was established under Colonial Development and Welfare Scheme No. D. 666. On it there are settled 290 peasant tenants. The average size of a holding is about two acres. They are required to maintain soil conservation measures, and are encouraged to adopt a rotation and to keep stock to provide manure. Many of them have made very creditable progress.

The settlement included a Central Farm designed to give paid employment to those who were not fully occupied on their own fields. On this farm thirty acres of cotton were cultivated and harvested. The yield was 175.9 lbs. of clean lint per acre. A fair crop of limes and a small quantity of other citrus fruit were harvested from the lime grove. At the end of the cotton season the working of the Central Farm was discontinued and most of the land was divided into small holdings and rented to tenants. Approximately twenty acres were reserved for use as sugar cane nurseries and as a Stud and Investigational and Demonstration Centre.

The whole of the settlers' crop of seed cotton was bought from them by the Agricultural Department, and was ginned, as was also the crop from the Central Farm, at the Settlement ginnyery. The crop amounted to 61 bales of clean lint from the settlers and 13 bales of clean lint from the Central Farm.

43. **SOIL CONSERVATION**

An additional fifty three acres of land were protected by contour bunds of stone or of earth planted with various grasses. This brings the total area dealt with during the last five years to 1,338 acres, which is approximately 15% of the estimated area under arable cultivation. Both large and small scale farmers have contributed to the progress which has been made, but a great deal remains to be done by both classes.

The protection of forests presents a difficult problem in Montserrat, but the grosser forms of spoliation have been checked.

44. VIRGIN ISLANDS

The Agricultural Station on Tortola exists primarily to promote the live-stock industry of the Virgin Islands.

Cattle

Work with the Red Poll x Senegal cross of cattle continued. It is already evident that the half-breds do well. A start has now been made towards building up a three-quarter bred herd to test the ability of this higher grade to stand up to local conditions. Grazing became scanty during the prolonged drought but the animals maintained reasonably good condition.

Equines

A French Canadian stallion and an American Jack were kept at stud. The former was rather sluggish and so not very popular, but the Jack was well patronised.

Sheep

The high grade Black Head Persians continued to thrive and two rams were disposed of for breeding purposes.

Pigs

The two Berkshire pigs made good growth. The sow farrowed in October and the seven young pigs (4 boars, 3 gilts) have been sold.

Sows have been brought great distances to be mated with the boar. Some having even been brought from the out Islands.

Service Records

Services of Government Stud animals for the year are as follows:—

<i>Name</i>	<i>Number</i>
Stallion "Census"	16
Red Poll Bull "Teddy"	35
" " " "Kitchener"	3
Jack "Col. Dunway"	35
Black Head Persian Sheep (Ram)	11
Berkshire Boar	48

General

Other important activities of the department were the maintenance of tick control by organised cattle dipping, and the promotion of pasture improvement and planting of fodder crops.

There has been an increase in the amount of land put into reasonable pasture mainly in the Western end of Tortola and in Virgin Gorda. This pasture is mostly in Guinea Grass, only a few peasants planting any Elephant or Guatemala grass as reserve feed for the drought period.

Advice and demonstrations were given to further soil conservation work by peasants.

SECTION IV

45. COLONIAL DEVELOPMENT AND WELFARE SCHEMES

Below are listed the various Colonial Development and Welfare Schemes which are being carried out by the departments of agriculture, together with brief details of those which have not already been mentioned in the early sections of the report.

LEEWARD ISLANDS

The following Schemes are operated under the Federal Estimates —

Scheme D. 32A (in continuation of D. 32) Appointment of Director of Agriculture, Leeward Islands. The Chief Veterinary Officer, Dr. L. R. Hutson, acted as Director of Agriculture throughout the year. Mr. R. B. Allnutt on secondment from Tanganyika Territory, was appointed Director of Agriculture as from 8th November, 1947, but did not arrive in the Colony until 1948.

Scheme 726 (in continuation of Scheme D. 27 and D. 27A) Appointment of Chief Veterinary Officer. Dr. L. R. Hutson continued to carry out the duties of Chief Veterinary Officer.

Scheme R. 54. Control of Insect Pests of Food Crops. This scheme provides for the employment of an Entomologist for the investigation of food-crop insect pests of the Leeward and Windward Islands Colonies. In 1946 the Entomologist who had been engaged on this work was temporarily seconded to the Gold Coast. He returned to duty in Grenada, Windward Islands, in March, 1947, and worked on cage tests of D.D.T. and on phytohormones. He also investigated the absorption of sprayed chemicals by lime plants. Later in the year he began studies on the control of cacao beetle. The results of his earlier work on food crop pests were published in the form of an illustrated booklet entitled "The Insect Pests of Food Crops in the Lesser Antilles" by R. G. Fennah.

ANTIGUA

Scheme D. 202. Clerical Staff—Department of Agriculture.

An adequate clerical staff was maintained.

Scheme D. 282. Land Settlement and Development Board.

See Section III, paragraph 21.

Scheme D. 465. Agricultural Development.

This comprehensive scheme provided for

- (i) Establishment of a Central Experiment Station (see) Section II, paragraph 10)
- (ii) Rehabilitation of Estate Agriculture (See Section III, paragraph 20)
- (iii) Staffing and other requirements of the Agricultural Department. Under this section of the scheme the increased staff needed in connection with the several development projects was maintained. Certain expenditure on demonstrations, soil conservation and land settlement projects was also met from the grant under this scheme.

ST. KITTS

Scheme D. 288. Government Dairy and Agricultural Station.

See Section II, paragraph 11.

Scheme D. 422. Government Veterinary Service, St. Kitts.

See Section III, paragraph 35.

NEVIS

Scheme D. 54. Agricultural Development in Nevis.

See Section III, paragraph 29.

ANGUILLA

Scheme D. 687. Agricultural Development in Anguilla.

See Section III, paragraph 30.

MONTSERRAT

Scheme D. 31. Agricultural Development in Montserrat.

This scheme provides the salaries of the Agricultural Superintendent, an Agricultural Assistant, and three instructors. It also pays for the maintenance of the Brades Stud and Investigation and Demonstration Centre, and for part of the maintenance of the Otway Stud Centre. See Section III, paragraphs 38 and 39.

The scheme, as originally approved in 1941, was for five years but has since been provisionally extended until 30th June, 1948.

Scheme D. 666. Otway Peasant Land Settlement.

This Scheme, in which two previous schemes D. 348 and D. 447 were merged, provided loan capital for the purchase of land and a free grant for its initial development. In 1947 recurrent expenses were met entirely from local funds. For an account of progress in 1947 see Section III, paragraph 42.

VIRGIN ISLANDS

Scheme D. 293.

Certain sections of this Scheme, which previously financed the entire work of the department, were, in 1947, transferred to the local funds. The work of the Department is described in Section III, paragraph 44.

SECTION V**46. SUMMARY OF LEGISLATION CHANGES**

The following ordinances and orders became law during the year.

FEDERAL

The Export of Sugar (Restriction) Order 1947. No. 17 of 1947.

ANTIGUA

The Land Tax Ordinance 1947 (No. 1 of 1947).

The Sugar Excise (Amendment) Ordinance 1947 (No. 5 of 1947).

The Sugar Export Cess Ordinance 1947 (No. 10 of 1947).

ST. KITTS-NEVIS

The Cotton Ordinance 1947 (No. 2 of 1947); new cotton regulations under this Ordinance were enacted.

The Sugar Excise (Amendment) Ordinance (No. 5 of 1947).

The Sugar Export Cess Ordinance 1947 (No. 7 of 1947).

MONTSERRAT

Nil.

VIRGIN ISLANDS

Nil.

R. B. ALLNUTT,
Director of Agriculture.

31st May, 1948.

Report by the Chief Veterinary Officer Leeward Islands Colony On Animal Health during the year 1947

A. Livestock in the Colony

The only official figures available as to the numbers of different classes of livestock are those of the 1946 Census, as follows :—

<i>Cattle</i>	<i>Sheep</i>	<i>Goats</i>	<i>Swine</i>	<i>Horses</i>	<i>Poultry</i>
18,959	11,699	15,884	5,878	2,989	66,274

It can be more or less assumed that these figures would represent the average number during 1947 inasmuch as the birth, death and slaughter rates did not vary considerably during the year from those of 1946 and there were no losses from Epizootics.

The general position with regard to livestock in the Colony has been discussed elsewhere in the Annual Report of the Department of Agriculture and further reference is therefore considered unnecessary except to state that the Veterinary Section is connected with Animal Husbandry in all its aspects.

B. Livestock Improvement

Elsewhere in the Annual Report reference has been made to the general improvement in the breeding and management of livestock which is being implemented principally through the several Agricultural Stations within the Colony.

In addition to these projects, it is gratifying to record that in Antigua especially, there has been within the last few years a rapidly increasing livestock consciousness, reflected in the establishment of dairy farming under the auspices of the Livestock and Dairy Development section of the Rehabilitation of Estate Agriculture in the island.

C. General Position With Regard to Animal Health

The Colony continues to enjoy freedom from the majority of the serious infectious and contagious diseases which exact such heavy toll in other countries. The general statement, as made in last year's report still is applicable, namely, Bovine Tuberculosis especially in Antigua, continues to be the highest offender while Parasitism, especially internal, and Malnutrition associated with a low standard of animal husbandry are observed throughout the Colony. However, during the year under review the average standard of animal health was maintained. It is gratifying to record that no new diseases were reported.

The following is a summary of observed and reported animal diseases :—

(I) Infectious and Contagious Diseases

CLASS OF ANIMAL	BACTERIAL	VIRUS	SPIROCHAE-TAL	PROTO-ZOAN	FUNGOID
Equines ..	Tetanus Influenza				Ringworm
Cattle ..	Tuberculosis Mastitis Metritis Pasteurellosis			Coccidiosis Anaplas-mosis	Ringworm
Goats ..	Mastitis Metritis			Coccidiosis	
Swine ..	Tuberculosis Pasteurellosis				
Poultry ..	Mixed Infections Fowl Typhoid	Roup Fowl Pox Leucosis-Complex		Coccidiosis	
Dogs ..	Ulcerative Keratitis	Distemper			

(II) Parasitism

In equines, cattle, goats, swine, poultry, dogs and cats — (a) Helminthiasis
(b) Ecto-parasites.

(III) Miscellaneous Diseases

Traumatic injuries and lamenesses including wounds, Laminitis, Spavin, Canker.

(IV) Diseases of the Respiratory System

Coryza, Pneumonia, Epistaxis.

(V) Diseases of the Alimentary System

Bovine and Equine Indigestion of various forms.

(VI) Diseases of the Genito-Urinary System

Dystokia, Retained Placentae, Uterine Prolapse.

(VII) Deficiency Diseases

Avitaminosis, Hypocalcemia.

(VIII) Diseases of the Skin

Eczema and Non-Parasitic Dermatitis.

Review of Diseases

The following call for comment :—

A. Bovine Tuberculosis

The position with regard to the incidence of this disease in the Colony may be once more summarized as follows :—

ANTIGUA

The incidence of the disease still continues to be high amongst the working oxen. During the year 780 tests were carried out principally on estate working oxen with a 7.94 percentage of reactors. It is encouraging to note that several breeding and dairy-type herds have been regularly tested over a period of years and the number of reactors now being found is very small. The Red Poll x Senegal herd at the Central Experiment Station successfully passed the comparative intradermal test.

ST. KITTS-NEVIS

No clinical cases of this disease were observed during the year and condemnations at the Basseterre Market (St. Kitts) by reason of this disease were negligible. The herd at the Agricultural Station, Bayfords, St. Kitts, was tested on two occasions—there were no reactors.

MONTSERRAT.

The position is unchanged as from last year, when the conclusion was reached that the incidence of the disease in this island is negligible.

B. Equine Colic—Enzootic Colic**ST. KITTS**

There were fourteen (14) cases of this illness reported for the year, during the months of October to December. The following table shows the number of cases during the last 3 years as well as mortality percentages :—

Year	No. of cases	No. of Deaths	% Mortality
1945	19	7	36.8%
1946	37	9	24.3%
1947	14	5	35.7%

It is still considered that the main contributory cause to the incidence of these cases is faulty management, especially improper feeding and poor food. The possibility of associated Strongyle infestation in these cases is not being overlooked and the appropriate parasitic treatment and control measures are being carried out on many estates.

C. Parasitism

It is gratifying to record further improvement in the control of ticks, especially in Antigua where there are now five (5) dipping tanks in separated areas of the island. During the year 12,558 animals were passed through these dips. Livestock owners in general are becoming increasingly appreciative of this service and it is hoped to be able to increase the number of these tanks at a later date.

The modified dipping programme continues in the Virgin Islands which area remains as one being accredited free of the cattle fever tick.

With regard to internal parasitism, this is still a problem of major significance. Further observations as disclosed by post-mortem examinations of sheep slaughtered at the Central Experiment Station, Antigua, where the Phenothiazine-salt mixture (1-10) is made available to the flocks, show that this method is extremely efficient in controlling helminths commonly found amongst this class of livestock.

D. Mineral Deficiencies

It is also gratifying to record that the interest of many livestock owners within the Colony has been aroused in this connection, and in some instances the animal response to the feeding of minerals has been little short of miraculous.

The following mixtures based on available soil analyses, and clinical symptoms observed, are recommended to be fed in boxes to which the animals have free access :—

No. 1	Common Salt	100 lbs.
	Ferric Oxide of Iron	25 "
	Pulv. Copper Sulphate	1 "
	Cobalt Sulphate	2 ozs.
No. 2	Sterilized Bonemeal	

D. GENERAL

The Veterinary Section of the Department is responsible for measures to prevent the introduction or dissemination of communicable diseases, principally through the importation of livestock and this service was maintained throughout the year. In addition, the Meat Inspection service in St. Kitts-Nevis, while under the auspices of the Medical Department is under the supervision of the Veterinary Officer. In Antigua, this service is carried out by a part-time Veterinarian, this officer being under the control of the Medical Department. The operation of the Government Veterinary Service in St. Kitts has already been commented on elsewhere in the Departmental Report in the section dealing with the appropriate Development and Welfare Scheme.

The Chief Veterinary Officer in addition to his substantive post acted as Director of Agriculture during the year.

The following routine and special visits were made by the Chief Veterinary Officer :—

(a) Barbuda	January 6th—January 12th
(b) Tortola	January 16th—January 22nd
(c) Montserrat	February 17th—February 19th
(d) St. Kitts	February 21st—February 24th
(e) Jamaica	February 24th—March 9th (To attend Conference of Veterinary Officers in the B.W.I.)
(f) St. Kitts	May 9th—May 11th
(g) Montserrat	June 15th—June 24th
(h) St. Kitts	September 14th—September 21st
(i) St. Kitts	October 3rd—October 5th
(j) Tortola	October 28th—November 5th
(k) St. Kitts	December 12th—December 14th

A summary of legislation changes as affecting livestock in the Colony appears elsewhere in the Departmental report.

L. R. HUTSON, D.V.Sc.

Chief Veterinary Officer.

31st March, 1948.

